BRIDGES

Bridges are an essential component of our society. They encourage economic development and shape the structure of our communities in many ways. Highway bridges span natural and cultural divides, connecting places and communities. Bridges also are monuments to human ingenuity and civic architecture that add livability to the communities that we live, play and work in. Because of their size and frequency within a highway corridor, bridges also can leave a legacy which extends far beyond the time period of their construction. It is appropriate, therefore, that these structures also be designed with a sensitivity to the environmental and social context in which they will exist.

Early in the design process, the Aesthetic Committee recognized the importance of using bridge and structure design to improve the integration of the new highway system with the community. They began by studying the character of the physical setting of the existing highway route for clues to guide its aesthetic reorganization. They observed visually distinct segments at various points within the corridor which might be developed into the basis of a design framework. This work culminated with the recommendation that Rochester's new highway corridor should be developed as a parkway tied to the natural environment as a reflection of the community. In this scheme, a hierarchy of architectural treatments would be developed for each new bridge corresponding to its relative importance within the community.

The bridge structures which assumed the greatest importance within the aesthetic design framework developed for the new parkway are those planned for 19th Street NW, 6th Street SW and 2nd Street SW. These structures would be designed as the linchpins of the corridor, complete with wide decks, raised tree and shrub planters, pedestrian oriented site development and special railing and lighting systems. Members wanted a design unlike any other…one which had potential to create a new image for the city, as well as, celebrate the connections between the neighborhoods severed by the existing highway system.

Figure 2-1: Special Design Treatment Special design treatments will provide attractive, pedestrian-oriented site development at the 6th Street SW and 2nd Street SW bridge crossings.

While they dreamed, they also recognized that a local match would be necessary to provide the funds necessary for achieving their parkway vision. From the beginning, the Committee carefully worked at each step of the way to find creative design solutions to balance the often-conflicting components that arise from planning and designing any large scale transportation project such as this.

To achieve visual distinctiveness in the bridge development, cookie-cutter formulas that worked on previous projects were avoided. Rather, they became a starting point in determining the most appropriate design for the project. A fresh, new railing system design emerged, and then another, which is now intended to become one of the 'signature' features of the parkway structures. Members added other features to the concept. Several of the bridges will sport a unique architectural lighting system that will softly outline the bridge railings with color to extend their visual appeal into the night. Although all the details of these designs are not fully worked out, it is expected that the design concepts presented herein are sufficient to guide the development process to a functioning system.

Mn/DOT practice is a context-sensitive design approach as a means of responding to the values of Minnesota's citizens. The goal is the design of bridges and projects that are well accepted by both the users and the neighboring communities. To guide this practice, Mn/DOT has established guidelines for core transportation design. When local demand for design treatments exceed these guidelines, cost sharing by local units of government may be required. Because the aesthetic treatments recommended by the Aesthetic Committee for the bridges of this project will exceed these guidelines, cost sharing should be anticipated by the City.

Questions concerning bridge design details should be coordinated with the Preliminary Plans Unit in Mn/DOT's Office of Bridges and Structures. The policies which apply to bridge design are available upon request.

Figures 2-2: Corridor Bridge Structures Reconstruction of an existing highway corridor provides an opportunity to add visual distinction to the route through the design of its new bridges and structures.

Figure 2-3 and 2-4: Corridor Bridge Structures General layout drawings.

AESTHETIC DESIGN RECOMMENDATIONS

2.1 Definitions

The diagrams which follow, illustrate the categories used to describe the bridges of this project in this document. The structures are divided into three main categories, based upon functional type: Overcrossing Bridges, Undercrossing Bridges and Pedestrian Bridges. When a structure does not fall neatly within a particular category, designers should evaluate the conditions presented and apply the guidelines that are most appropriate. The definitions are from the perspective of the motorist on the more heavily traveled roadway.

Figure 2-5: Overcrossing Bridges: Bridges which allow mainlines to cross under local

streets or lower volume roadways. Example: Bridge No. 55043 (19th Street NW over TH52)
Figure 2-6: Undercrossing Bridges: Bridges which allow highway mainlines to cross over local streets, lower volume roadways, railroads, waterways or pathways. Example: Bridge Nos.55049 and 55050 (TH52 over TH14 West)

Figure 2-7: Pedestrian Bridges: Bridges for designed for exclusively for pedestrians. Example: Bridge No. 55044 (Pedestrian Bridge at 16th Street NW over TH52)

2.2 Bridge Design Guidelines

The design of the new parkway bridges should be developed in accordance with Mn/DOT's **A*esthetic Guidelines for Bridge Design*** manual available from the Office of Bridge and Structures. This document was developed as a reference manual to guide design development of bridges and structures in Minnesota. For the purpose of aesthetic design coordination, all of the bridges within this corridor are classified as 'Level B' structures. This is the level that is typically associated with trunk highway corridors and projects in urban settings.

2.3 General Elevations

In their vision for a visually distinctive parkway, the Aesthetic Committee recommended a hierarchy of architectural treatments for various groups of bridges, each corresponding to their relative importance within the community. Figures 2-8 through 2-13 are included herein as a snapshot of these details, as well as, a picture reference of the descriptions provided in the Aesthetic Committee's ***Aesthetic Design Guidelines Summary*** included in Introduction of this Design Guide manual.

Unless otherwise stated, the recommendations which follow, apply to the new bridges of the parkway project. Depending upon the availability of funds, the existing bridges designated to remain should be rehabilitated to blend with the designs of the new bridges.

Figures 2-8 through 2-13: Bridge Elevations These bridge elevations provide a picture reference of the descriptions provided in the Aesthetic Committee's ***Aesthetic Design Guidelines Summary*** included in the Introduction of the this Design Guide manual.

2.4 Substructure Design

The substructure provides the visual and literal base for a bridge and moderates the suspended superstructure and earth foundation. The visual appeal of bridge forms is greatly influenced by the substructure units. These units include piers, abutments, wall systems and other related components. Although this section attempts to isolate the treatment of the substructure, one must remember that all aspects of the structure should be considered in relation to the whole

bridge, and the whole bridge in relation to its specific site location.

2.5 Piers

The term 'pier' is used to collectively to describe the system of columns, shafts and pier caps that support the superstructure at a single location. Generally, piers should not be the visual focal point of a bridge composition, but rather, the horizontal lines of the superstructure. Because piers are required to support the superstructure, they should be of sufficient size and proportion to perform this function without question.

The piers recommended for the new bridges of the parkway consist of multiple rectangular columns and an integral arched shaped pier cap. The recommended design is shown on Figures 2-14 and 2-15. The cap should be designed with a decorative parabolic (flat) arch between the columns and include standard upswept ends. Columns should be banded to match the stone block pilaster treatment proposed for the abutment corners and wall systems of the highway corridor. When banding adjustments are required, they should be made in the banded area immediately below the cap. To the greatest practical extent, the column width should remain constant at 4 ft throughout the highway corridor. Depth may vary in relation to the scale and proportion of the opening sizes between the columns. Collision struts should be provided for all structures, including the existing bridges designated to remain. See Chapter 9 for recommendations concerning crash cushion solutions.

Figure 2-14: Pier Design Columns should be banded to match the stone block pilaster treatment proposed for the abutment corners and wall systems of the highway corridor.

Figure 2-15: Pier Design Column width should remain constant throughout the highway corridor. Depth may vary in relation to the scale and proportion of the opening sizes between the columns.

The new bridge over the Zumbro River requires a different type of pier design than described above. Because it is a wall design, its width can be narrower than specified above. The pier shaft should be banded to match the stone block pilaster treatment proposed for the abutment corners of the structure.

Figure 2-16: Pier Design A narrower shaft width should be provided than specified for the remaining highway bridges.

2.6 Abutments

Abutments define the beginning and the end of a bridge. Visually, they receive the superstructure loadings at the ends of the structure and are generally perceived by motorists as

the visual limits within which the bridge elevation is contained. The proportions of an abutment elevation are related to the height of the abutment structure and the depth of bridge. Abutment depths should be designed to be proportional to the beam depth (ie, smaller abutments should be used for shallower depth structure depths). Grading and beam span length adjustments may be required to accomplish the visual balancing that is often required.

Although stub abutments are often the most economical type, they should not be used on this project because they compromise the ability to advantage a good visual presentation of the bridge structure. Semi-deep or deep abutments should be used because they not only shorten the end spans of a bridge, but also can be used to draw attention to the terminus of the bridge. Because the Aesthetic Committee placed great emphasis on this detail, notes were added to many of the elevation drawings recommending that abutments be located as close to the roadway as possible…but not so close as to require secondary safety protection devices.

Figure 2-17 Abutment Design Semi-deep or deep abutments should be used to reduce the size of the opening beneath the bridge.

Figure 2-18 and 2-18a: Abutment Design Design alternative to that shown in Figure 2-17 intended for bridges linked to Rochester's Flood Control Project.

All of bridges within the new parkway should be designed with vertical abutments and an abutment feature that visually anchors the bridge railings. This feature is referred to as a stone block pilaster on the drawings. These pilasters should protrude from the wall face at the abutment corners and terminate vertically at the top of the railing silhouette of the bridge structure. Although all the details of this feature are not fully worked out with respect to joints and the mask wall, it is expected that the design is sufficient to guide the design to conclusion. To provide aesthetic continuity within the project, the texture and color finishing specified for abutments should match the designs proposed for the retaining wall systems of this project.

Figure 2-19: Pilaster Details The pilasters should protrude from the wall face at the abutment corners and terminate vertically at the top of the railing silhouette of the bridge structure.

Figure 2-20: Abutment Design With the exception of bridges designed with wall abutments, the pilaster feature shown on Figures 2-17 and 2-18 wraps around the corner of the abutment.

Figure 2-21: Abutment Design To provide aesthetic continuity within the project, the texture and color finishing specified for abutments should match the designs proposed for the wall systems of this project.

2.7 Superstructure Design

This section addresses the aesthetic considerations associated with superstructure design. The design elements of the superstructure include structure type, span length and the railing system. Visually, the superstructure is influenced by the bridge structure layout. Structure layout is a term that collectively refers to all of the decisions that define the layout of a bridge…such as, the number of spans, the orientation of the substructure units to the superstructure, the location of the abutments and span lengths. Structure layouts generally have a far-reaching effect in the visual formulation of the bridge structure.

One aspect of the superstructure design that merits attention involves the custom railing systems developed by the Aesthetic Committee for the bridges of the parkway project. Railings are important both functionally and visually on bridge structures, because they form the upper profile of the bridge. Because the top of the rail system often runs parallel to the line of sight of the driver on vehicular bridges, it becomes a prominent feature of the structure's architectural presentation. Several of the bridges will also sport a unique architectural lighting system that will softly outline the bridge railings with color to extend their visual appeal into the night. Although this section attempts to isolate the treatment of the substructure, designers should remember that all aspects of the structure should be considered in relation to the whole bridge, and the whole bridge in relation to its site location.

2.8 Structure Type

With few exception, all of the bridges within the new parkway will be designed as girder bridges. That is, they will be designed either with steel girders or prestressed concrete beams. This type bridge structure is preferred by Mn/DOT because the span lengths required on most Minnesota highways economically fall within the design limits of girder bridges. The pedestrian bridge may be the exception.

2.9 Railing System

Railings are important both functionally and visually on bridge structures. Functionally, they form the barrier that contain vehicles, pedestrians and bicycles and typically consist of metal and concrete components. Because railings form the upper horizontal profile of a bridge, they become visually prominent to motorists passing beneath overcrossing bridge structures.

The design of the concrete railing system is often used to advantage the architectural presentation of bridge structures in new highway corridors. However, the design recommended for this project includes a concrete parapet which has been architecturally understated, so that attention will be focused to the metal component of the railing system or beyond when viewed by motorists.

2.10 Concrete Railings

The concrete bridge railings of overcrossing bridges should be designed as a standard (rectangular) parapet with an integrally formed cap and recessed panel treatment on both inside and outside faces. See Figure 2-25. These details will preclude use of slip forming construction techniques on most of the bridges of this project.

On several bridges, special shrub or vine planters have been combined with the parapet railing design. The details associated with these planters are included in the Appendix of this Design Guide. On the signature structures proposed at 6th Street SW and 2nd Street SW, the concrete parapet should be designed to continue to the end of the approach panels and, perhaps, even beyond, to symbolically anchor the "rolling hills" theme rail to the earth by completing the long radius railing sweeps shown on Figures 2-13 and 2-24.

The concrete railings of undercrossing bridges should be designed as a standard concrete railing (Type F Modified). They should be designed with an integrally formed cap and recessed panel treatment on the outside face. Exceptions to this treatment, include the concrete railings of the bridges listed on Figures 2-9 and 2-10, where a "see-through" railing has been recommended by the Aesthetic Committee.

When concrete traffic barrier abuts the bridge railing system, the recessed panel treatment on the outside face of the railing system should be continued along the length of the barrier as shown on Sketch A of Figure 2-22.

An issue, which remains unresolved, involves the Committee's request for the construction of constant slope concrete traffic barriers throughout the project, including Type F barriers (See Figure 2-22), mainline vine planters (See Figures 3-3, 3-4 and 3-4a) and the median barriers (See Figure 9-1). The reason that this feature has been recommended is so that a rustication groove can be added to simulate a continuous panel recess like that to be specified on the outer faces of all of the bridge structures.

Figure 2-22: Traffic Barrier Design Concrete railing design has been architecturally understated, so that attention will be focused to the metal component of the railing system or beyond when viewed by motorists.

Figure 2-23: Traffic Barrier Design An additional traffic barrier will be used on the bridge at 48th Street SW to provide additional safety for pedestrian and bicyclists using this structure.

2.11 Metal Railings

All bridges offering pedestrian access will require metal railings designed as protective screens. Federal and state policy mandates that all bridges over freeways must have a screen to prevent rocks and other items from being thrown onto the traffic below. Although this function can be accomplished by a utilitarian chain link fence, the Aesthetic Committee quickly

seized the opportunity to improve on this design. In its place they developed two custom metal railing system designs, one of which is envisioned to become the key feature on several of the new bridges of the parkway project. Because both of these screen designs meets the requirements of Mn/DOT's protective screening policy, it is expected that additional cladding material will not be necessary.

The rolling hills and flowing rivers of the Rochester area had a profound influence on the Aesthetic Committee in many ways, as it considered and developed the parkway design, not the least of which was the theme rail design shown on Figures 2-13 and 2-24. The metaphoric qualities of the earth and sky played into the discussion of how to design this screen. Members added other elements to the concept, including: vines to breath life into the work and add seasonal interest…a distinctive green railing color to emulate the seasonal look of the crop fields surrounding the city…a subtle blue top rail color to suggest flowing water..and, most recently, a unique architectural lighting system to softly outline the railings on both sides of six of the new structures with white and/or colored lighting to extend their visual appeal into the night. For additional details concerning proposed lighting systems and application, see ***Aesthetic Design Guidelines Executive Summary***, Chapter 7 and Figures 7-2 through 7-4 and drawings in Appendix of the Design Guide manual.

The railing design concepts which were developed by LSA Design, Inc., will be designed by Mn/DOT, following fabrication and finishing approval. One of the challenges remaining is accomplishing the Aesthetic Committee recommendation that the top rail chords be visually emphasized, perhaps through size or fewer post supports, to create the effect of an independently suspended arch. The "rolling hills" rail screen will consist of painted metal frames with overlapping woven wire fabric.

Figure 2-24: Metal Railing Design The Aesthetic Committee saw an opportunity to create a work of functional art in the design of this signature bridge railing system.

Figure 2-25: Metal Railing Design Two railing designs will be developed, each patterned after the rolling hills of the Rochester area.

2.12 Pedestrian Bridges

Unlike vehicular bridges, which are comparatively much larger structures, pedestrian bridges can be more easily fit within a highway corridor with minimum impact and their design can be more environmentally or community oriented. While safe pedestrian passage remains their primary purpose, pedestrian bridges can also be designed to "celebrate" the connection of community that often results with construction of these type of structures. Visually successful pedestrian bridges result when the design enlivens the crossing experience and expands the purpose of the bridge to also include what it connects and whom it serves. A public design competition has been proposed by the Aesthetic Committee to design the pedestrian railing system as a work of art for the community.

Figure 2-26: Pedestrian Bridge The existing pedestrian walkway at 16th Street NW lacks alluring appeal that encourages use.

Figure 2-26a: Pedestrian Bridge A public competition may be held to design the railing system of this bridge as a work of art for the community.

2.13 Concrete Surface Treatment

Bridge sidewalks should be provided with a minimum width of at least 8 feet where justified by pedestrian traffic. Additional width may be justified when bicycle traffic is also expected. Generally, the width of bridge sidewalks should not be less than the width of the walks leading to the structure. Designers should consult local officials for requirements.

For streets with a design speed greater than 40 mph, a traffic barrier must be provided at the outside edge of a bridge sidewalk, as well as, a 4 foot reaction space between the traveled lane and the barrier. See Figure 2-23. Consult Mn/DOT's Bridge Design Manual (Section 5-392.201) for additional requirements.

The flatwork concrete on bridge medians not designated to receive planting should receive a stamp texture and colored surface treatment matching pattern(s) used by the City of Rochester elsewhere within the community. Large traffic islands, like those associated with the 19th Street NW bridge crossing, should include a 2 to 3 foot paved border around the entire perimeter area. It's surface should be stamp textured and colored to match the median treatments described above.

Unless otherwise specified, all bridge sidewalks should be completed with a combination of exposed aggregate and surface finish matching patterns used by the City of Rochester elsewhere within the community. Designers should consult local officials for requirements.

Concrete snow berms along roadway shoulders should be completed with a smooth troweled finish.

Unless otherwise specified, concrete bridge slopes should be completed with a course broom surface finish. Slopes located beneath bridges along the Cascade Creek waterway and Zumbro River should be paved with natural limestone.

Figure 2-27: Concrete Surface Treatment Concrete snow berms along roadway shoulders should be completed with a smooth troweled finish.

Figure 2-28: Concrete Surface Treatment Concrete bridge slopes should be completed with a course broom surface finish.

Figure 2-29: Slope Paving Slopes located beneath bridges along the Cascade Creek waterway and Zumbro River should be paved with natural limestone.

2.14 Architectural Finishing Treatment

Natural rock outcrops and local buildings designed with stone served as design inspirations for the wall patterns on this project. These influences are illustrated in Figure 2-30.

All abutments constructed within the new parkway project should include an architectural pattern or relief that simulates rough weathered edge and seam face limestone or smooth cut sandstone blocks. The rough textured treatment must be achieved with a custom formliner system designed to create the finished effect of a weathered limestone outcropping. Visually successful stone and rock formliner patterns often require development of multiple liner sections, which can be fit or matched with each other to avoid obvious pattern repeats. This pattern should be demonstrated through sample panel construction before full scale production, so that the City of Rochester can have an opportunity to participate in adjustment decisions. The smooth textured treatment can be achieved using conventional concrete formwork and application of a cement based finishing system to create the finished effect of cut sandstone blocks.

All abutments constructed within the Cascade Creek waterway and Zumbro River should include a smooth flute texture that matches the rib texture constructed on Rochester's Flood Control Project in the heart of the city. See Figure 2-18, 2-18a and Appendix.

Figure 2-30: Design Inspiration Natural geologic formations of limestone and sandstone found in the Rochester area served as the design inspiration for the wall patterns provided on the bridge abutments of this project.

Figure 2-31: Architectural Finishing Treatment The rough textured treatment is intended to create the finished effect of a weathered limestone outcropping. The smooth textured treatment is intended to create the finished effect of cut sandstone blocks.

The layout of the architectural surface treatment should be designed to be compatible with Mn/DOT's standard panel design length of 30'-6". When special circumstance requires wall lengths less than this, panel joints should be located, so that they do not become visually prominent in the final work. Joint layout requires special attention when retaining walls continue or abut bridge wing walls, so that architectural patterns can be blended together in an aesthetically pleasing manner. Early and continuous coordination between designers has been found to be the best strategy to avoiding layout problems.

Payment for finishing rough textured surfaces should be provided in contract documents using

the Contract Item: ***"Architectural Surface Treatment, Type _____".***

Payment for finishing smooth flute textured surfaces should be provided in contract documents using the Contract Item: ***"Architectural Surface Treatment, Type _____".***

Payment for finishing smooth textured surfaces should be provided in contract documents as incidental work to the items where utilized.

Specifications for texture finishing can be obtained from Mn/DOT's Office of Bridges and Structures. Samples of the colors can be obtained from the Corridor Development Unit in Mn/DOT's Office of Technical Support.

2.15 Painting and Finishing

As a unifying design theme within the new highway corridor, the same color finishing treatments described for retaining walls and traffic barriers should be provided for the bridge components of this project. These colors are illustrated Figure 2-32.

Rough textured surfaces should be painted with an approved acrylic stain in a three color tint range characteristic of natural Mankato- Kasota Limestone, including subtle color variations, mineral oxidation and staining. This range should be demonstrated by field testing, so that the the City of Rochester can have an opportunity to participate in final color decisions. In areas where graffiti tags may become a problem, consideration should be given to using an anti-graffiti coating following this painting.

Sandstone block textured surfaces, fluted fin textured surfaces and wall caps should be painted with an approved acrylic stain matching Federal Standard 595B Color No.33617 (Light Tan).

Rough textured surfaces simulating limestone outcroppings should be painted with an approved acrylic stain matching Federal Standard 595B Color No.33522 (Dark Tan). Cost permitting, multi-color finishing may be submitted therefore.

All concrete beams and steel girders should be painted a color matching Federal Standard 595B Color No. 26008 (Charcoal Gray). This color should be applied to a sample panel, along with tints in the blue-black range, so that the City of Rochester can have an opportunity to participate in final adjustment decisions.

Ornamental Metal Railing Types 1 and 2 and Structural Tube Railing should be painted a color matching Federal Standard 595B Color No. 14066 (Forest Green). Where designated, the top rail should be painted a color matching Federal Standard 595B Color No.15123 (Royal Blue).

Payment for single color finishing should be provided in contract documents as incidental work to the items where utilized.

Payment for multi-color finishing should be provided in contract documents using the Contract Item: ***"Architectural Color System, Type _____".***

Specifications for paint finishing can be obtained from Mn/DOT's Office of Bridges and Structures. Samples of the colors can be obtained from the Corridor Development Unit in Mn/DOT's Office of Technical Support.

Figure 2-32: Design Theme Colors Distinctive colors linked to nature will add visual appeal to the new parkway project.

Figure 2-1: Special Design Treatment Special design treatments will provide attractive, pedestrian-oriented site development at the 6th Street SW and 2nd Street SW bridge crossings. (Concept drawing by LSA Design, Inc.)

TH 14/52 CORRIDOR BRIDGE STRUCTURES			
Structure Line	**Structure Number**	**Location**	**Existing / New**
s1	55071	85th St. NW over TH52	New
s2	55069	75th St. NW over TH52	New
s3	55070	65th St. NW over TH 52	New
s4	55003	55th St. NW over TH52	Existing
s5	55035	41st St. NW over TH52	Existing
s6	5024	37th St. NW over TH52	Existing
s7	55043	19th St. NW over TH52	New
s8	55044	Ped Bridge at 16th St. NW over TH52	New
s9	55045	TH52 SB over 7th St. NW and C&NW RR	New
s9	55046	TH52 NB over 7th St. NW and C&NW RR	New
s9	55047	TH14 WB Ramp over 7th St. NW and C&NW RR	New
s9	55048	TH52 NB Ramp over 7th St. NW and C&NW RR	New
s10	55049	TH52 SB over TH14 West	New
s10	55050	TH52 NB over TH14 West	New
s11	55059	TH52 SB Ramp over Cascade Creek	New
s11	55060	TH14 EB Loop over Cascade Creek	New
s11	55061	TH52 SB over Cascade Creek	New
s11	55062	TH52 NB over Cascade Creek	New
s11	55063	TH14 EB Loop over Cascade Creek	New
s11	55064	TH14 EB Ramp over Cascade Creek	New
s12	55051	2nd St. SW over TH52	New
s13	55052	6th St. SW over TH52	New
s14	55011	TH14 East over TH52	Existing
s15	55018	16th St. SW over TH52	Existing
s16	55057	TH52 SB over Zumbro River	New
s17	55058	TH52 NB over Zumbro River	New
s18	55067	40th St. SW over TH63	New
s19	55068	48th St. SW over TH63	New
s20	55010	TH52 SB over TH63	Existing
s20	55009	TH52 NB over TH63	Existing
s21	55021	H52 NB over Willow Creek	Existing
s21	55022	TH52 SB over Willow Creek	Existing

Figure 2-2: Corridor Bridge Structures Reconstruction of an existing highway corridor provides an opportunity to add visual distinction to the route through the design of its new bridges and structures.

T.H. 14 / 52 ROCHESTER CORRIDOR

KEY	
STRUCTURE LINE	OVER / UNDER
S1	85TH ST. N.W. OVER T.H. 52
S2	C.S.A.H. 14 (DOUGLAS RD.) OVER T.H. 52
S3	65TH ST. N.W. OVER T.H. 52
S4	55TH ST. N.W. OVER T.H. 52
S5	41ST ST. N.W. OVER T.H. 52
S6	37TH ST. N.W. OVER T.H. 52
S7	19TH ST. N.W. OVER T.H. 52
S8	PEDESTRIAN WALKWAY OVER T.H. 52 AT 16TH ST. N.W.
S9	T.H. 52 AND RAMPS OVER 7TH ST. AND C & NW RR
S10	T.H. 52 AND RAMPS OVER T.H. 14
S11	T.H. 52 AND RAMPS OVER CASCADE CREEK
S12	2ND ST. S.W. OVER T.H. 52
S13	6TH ST. S.W. OVER T.H. 52
S14	T.H. 14 OVER T.H. 52
S15	16TH ST. S.W. OVER T.H. 52
S16	T.H. 52 W.B. OVER SOUTH FORK ZUMBRO RIVER T.H. 52 E.B. OVER SOUTH FORK ZUMBRO RIVER
S17	CO. RD. D OVER T.H. 52
S18	T.H. 63 UNDER 40TH ST. S.W.
S19	T.H. 63 UNDER 48TH ST. S.W.
S20	T.H. 52 OVER T.H. 63
S21	T.H. 52 OVER WILLOW CREEK

Figure 2-3: Corridor Bridge Structures

GENERAL LAYOUT T.H. 14/52 ROCHESTER CORRIDOR

KEY	
STRUCTURE LINE	OVER / UNDER
s7	19TH ST. N.W. OVER T.H. 52
s8	PEDESTRIAN WALKWAY OVER T.H. 52 AT 16TH ST. N.W.
s9	T.H. 52 AND RAMPS OVER 7TH ST. AND C & NW RR
s10	T.H. 52 AND RAMPS OVER T.H. 14
s11	T.H. 52 AND RAMPS OVER CASCADE CREEK
s12	2ND ST. S.W. OVER T.H. 52
s13	6TH ST. S.W. OVER T.H. 52

Figure 2-4: Corridor Bridge Structures

GENERAL LAYOUT T.H. 14/52 ROCHESTER CORRIDOR

S:/DESIGN/PRELIM/KAREN/ROCHESTOR/GENLAY.DGN

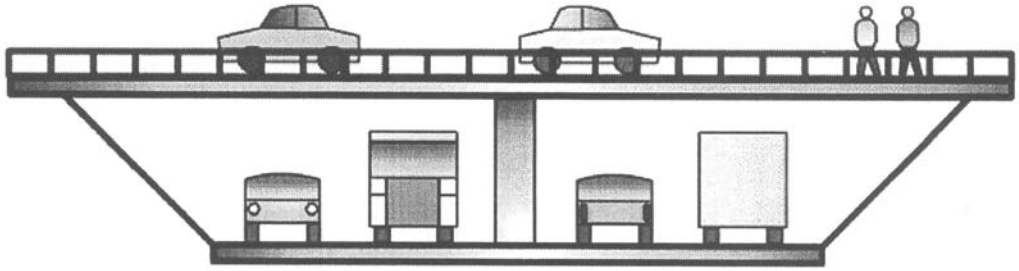


Figure 2-5 Overcrossing Bridges: Bridges which allow mainlines to cross under local streets or lower volume roadways. Example: Bridge No. 55043 (19th Street NW over TH52)

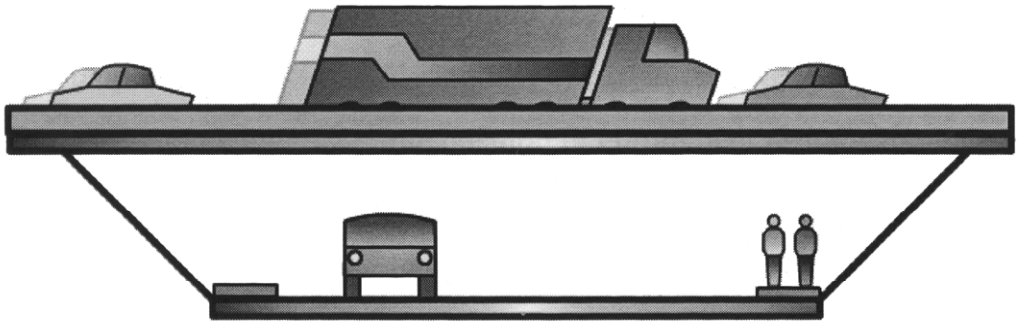


Figure 2-6: Undercrossing Bridges: Bridges which allow highway mainlines to cross over local streets, lower volume roadways, railroads, waterways or pathways. Example: Bridge No. 55049 and 55050 (TH52 over TH14 West)

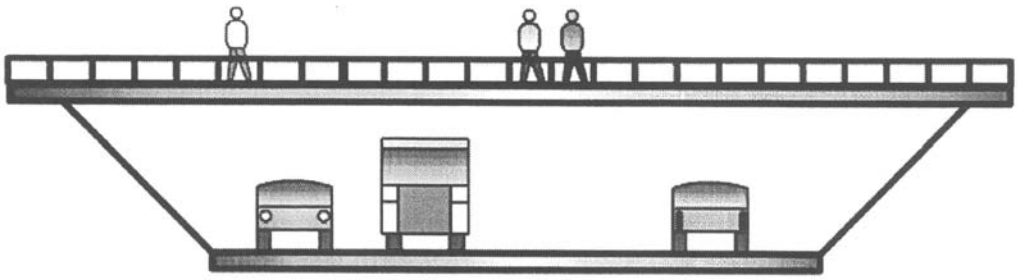
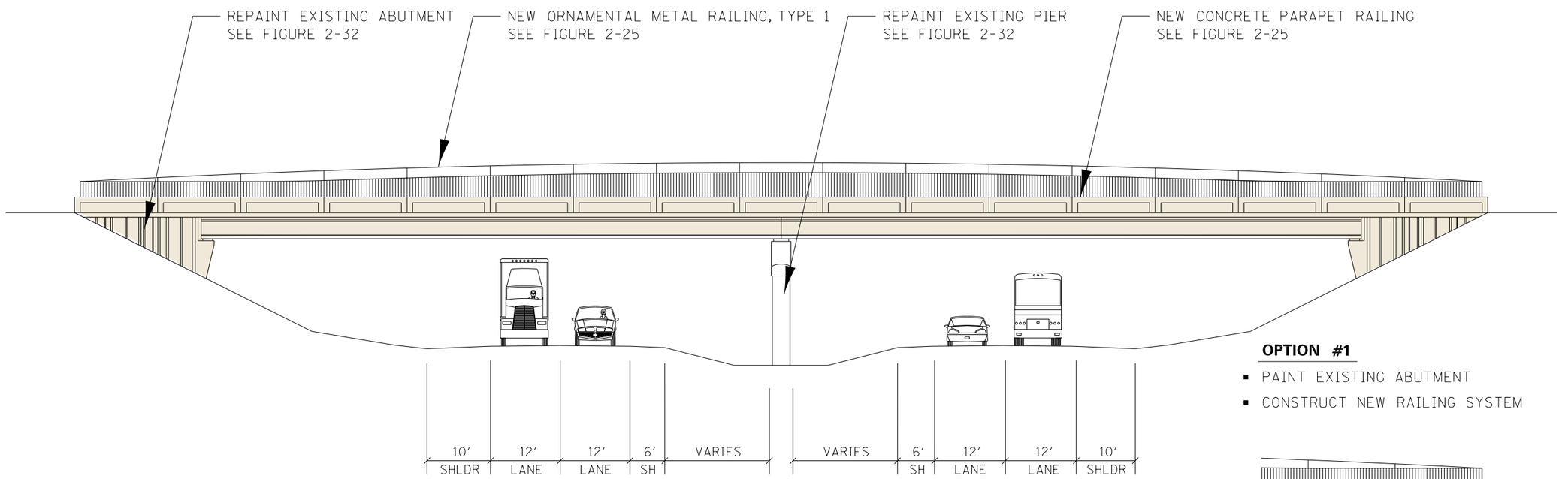


Figure 2-7: Pedestrian Bridges: Bridges designed exclusively for pedestrians. Example: Bridge No. 55044 (Pedestrian Bridge at 16th Street NW over TH52)

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55003	55TH STREET NW OVER TH52	EXISTING
BRIDGE NO. 55035	41ST STREET NW OVER TH52	EXISTING
BRIDGE NO. 55024	37TH STREET NW OVER TH52	EXISTING
BRIDGE NO. 55018	16TH STREET SW OVER TH52	EXISTING



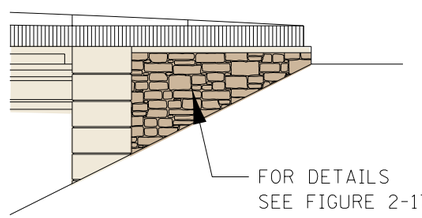
GENERAL BRIDGE ELEVATION
BRIDGE NO. 55003 SHOWN

NOTES:

- THE LENGTH OF INDIVIDUAL PARAPET PANELS SHOULD BE EQUAL ACROSS THE SPAN LENGTH OF THE BRIDGE.
- CONCRETE RAILING DESIGN SHOWN REQUIRES POST TENSIONING.
- METAL RAILING DESIGN SHOWN MAY REQUIRE ADDITIONAL POSTS. DESIGN TO EMPHASIZE TOP RAIL CHORDS.

OPTION #1

- PAINT EXISTING ABUTMENT
- CONSTRUCT NEW RAILING SYSTEM

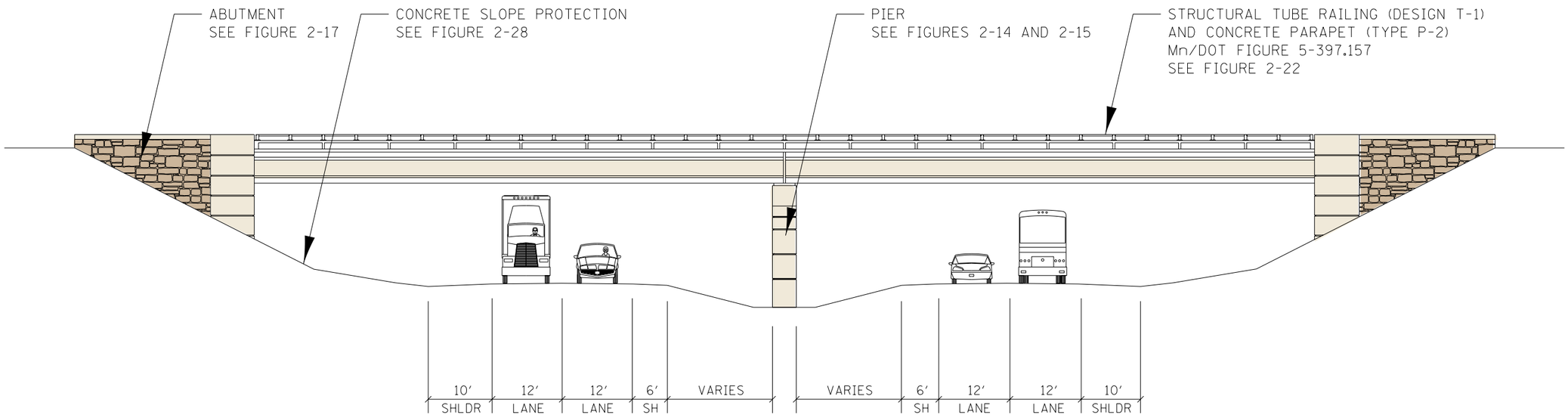


OPTION #2

- CLAD EXISTING ABUTMENT WITH CONCRETE ARCHITECTURAL TEXTURE AND COLOR FINISHING SYSTEM, MECHANICALLY FASTENED. 8'' MINIMUM THICKNESS
- CONSTRUCT NEW RAILING SYSTEM

Figure 2–8: BRIDGE ELEVATION

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55045	TH52 SB OVER 7TH STREET NW AND C&NW RR	NEW
BRIDGE NO. 55046	TH52 NB OVER 7TH STREET NW AND C&NW RR	NEW
BRIDGE NO. 55047	TH14 WB RAMP OVER 7TH STREET NW AND C&NW RR	NEW
BRIDGE NO. 55048	TH52 NB RAMP OVER 7TH STREET NW AND C&NW RR	NEW
BRIDGE NO. 55049	TH52 SB OVER TH14 WEST	NEW
BRIDGE NO. 55050	TH52 NB OVER TH14 WEST	NEW
BRIDGE NO. 55011	TH14 EAST OVER TH52	EXISTING
BRIDGE NO. 55055	TH52 SB OVER TH63	EXISTING
BRIDGE NO. 55056	TH52 NB OVER TH63	EXISTING



GENERAL BRIDGE ELEVATION

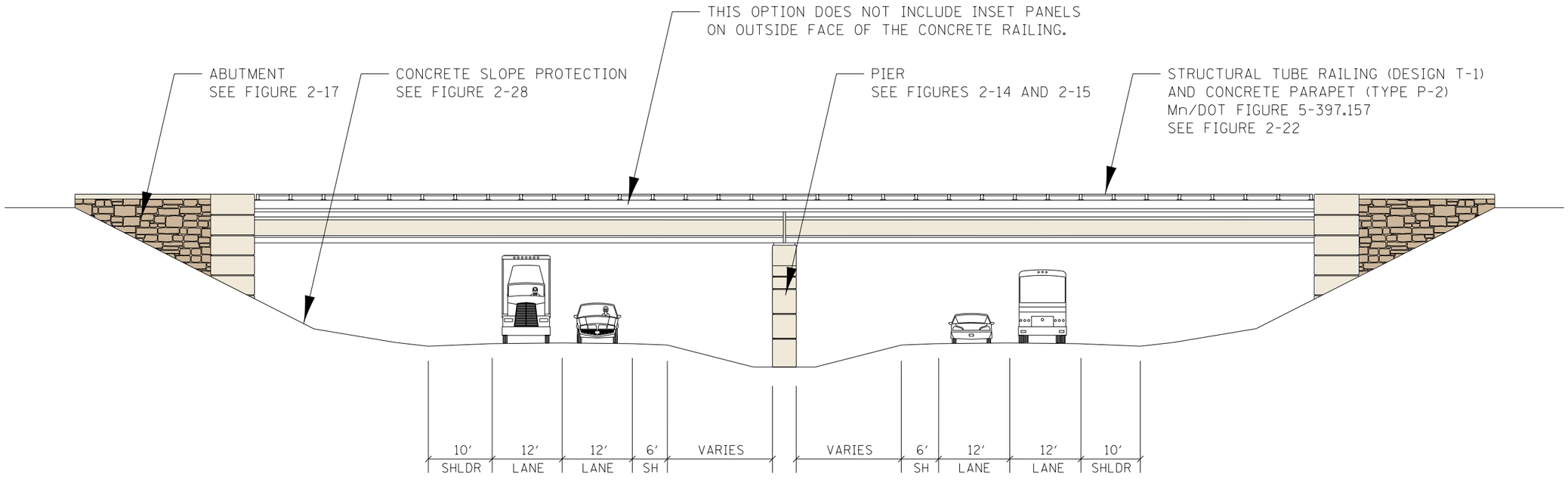
BRIDGE NO. 55049 SHOWN

NOTES:

- LOCATE ABUTMENTS AS CLOSE TO THE ROADWAY AS POSSIBLE TO REDUCE THE SIZE OF THE OPENING BENEATH THE BRIDGE (IE, AT CLEAR ZONE LIMIT)
- DESIGN ABUTMENTS TO BE THE SAME SIZE AT EACH END OF THE STRUCTURE FOR VISUAL BALANCE IN THE ARCHITECTURAL COMPOSITION.
- THE CLEAR HEIGHT-DEPTH PROPORTION BETWEEN EXPOSED ABUTMENT AND BEAM DEPTH SHOULD NOT EXCEED A 2:1 RATIO.

Figure 2–9: BRIDGE ELEVATION

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55045	TH52 SB OVER 7TH STREET NW AND C&NW RR	NEW
BRIDGE NO. 55046	TH52 NB OVER 7TH STREET NW AND C&NW RR	NEW
BRIDGE NO. 55047	TH14 WB RAMP OVER 7TH STREET NW AND C&NW RR	NEW
BRIDGE NO. 55048	TH52 NB RAMP OVER 7TH STREET NW AND C&NW RR	NEW
BRIDGE NO. 55049	TH52 SB OVER TH14 WEST	NEW
BRIDGE NO. 55050	TH52 NB OVER TH14 WEST	NEW
BRIDGE NO. 55011	TH14 EAST OVER TH52	EXISTING
BRIDGE NO. 55055	TH52 SB OVER TH63	EXISTING
BRIDGE NO. 55056	TH52 NB OVER TH63	EXISTING



GENERAL BRIDGE ELEVATION

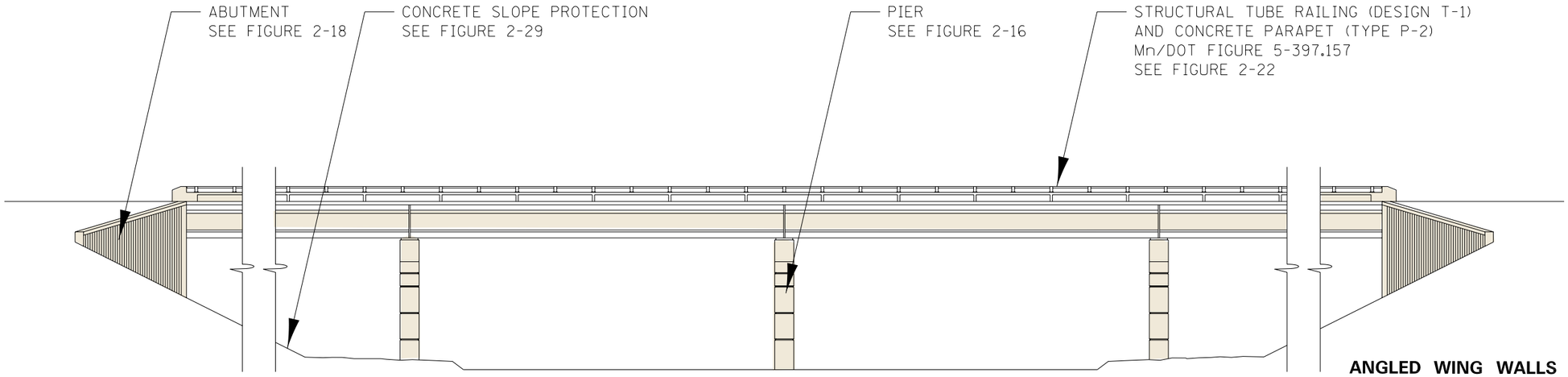
BRIDGE NO. 55049 SHOWN

NOTES:

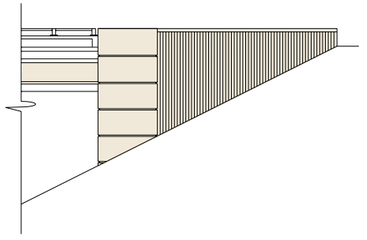
- LOCATE ABUTMENTS AS CLOSE TO THE ROADWAY AS POSSIBLE TO REDUCE THE SIZE OF THE OPENING BENEATH THE BRIDGE (IE, AT CLEAR ZONE LIMIT)
- DESIGN ABUTMENTS TO BE THE SAME SIZE AT EACH END OF THE STRUCTURE FOR VISUAL BALANCE IN THE ARCHITECTURAL COMPOSITION.
- THE CLEAR HEIGHT-DEPTH PROPORTION BETWEEN EXPOSED ABUTMENT AND BEAM DEPTH SHOULD NOT EXCEED A 2:1 RATIO.

Figure 2–9a: BRIDGE ELEVATION
ALTERNATIVE TO FIGURE 2–9

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55059	TH52 SB RAMP OVER CASCADE CREEK	NEW
BRIDGE NO. 55060	TH14 EB LOOP OVER CASCADE CREEK	NEW
BRIDGE NO. 55061	TH52 SB OVER CASCADE CREEK	NEW
BRIDGE NO. 55062	TH52 NB OVER CASCADE CREEK	NEW
BRIDGE NO. 55063	TH14 EB LOOP OVER CASCADE CREEK	NEW
BRIDGE NO. 55064	TH14 EB RAMP OVER CASCADE CREEK	NEW
BRIDGE NO. 55057	TH52 SB OVER ZUMBRO RIVER	NEW/MODIFIED
BRIDGE NO. 55058	TH52 NB OVER ZUMBRO RIVER	NEW/MODIFIED



GENERAL BRIDGE ELEVATION
BRIDGE NO. 55057 SHOWN



ANGLED WING WALLS
ZUMBRO RIVER BRIDGES

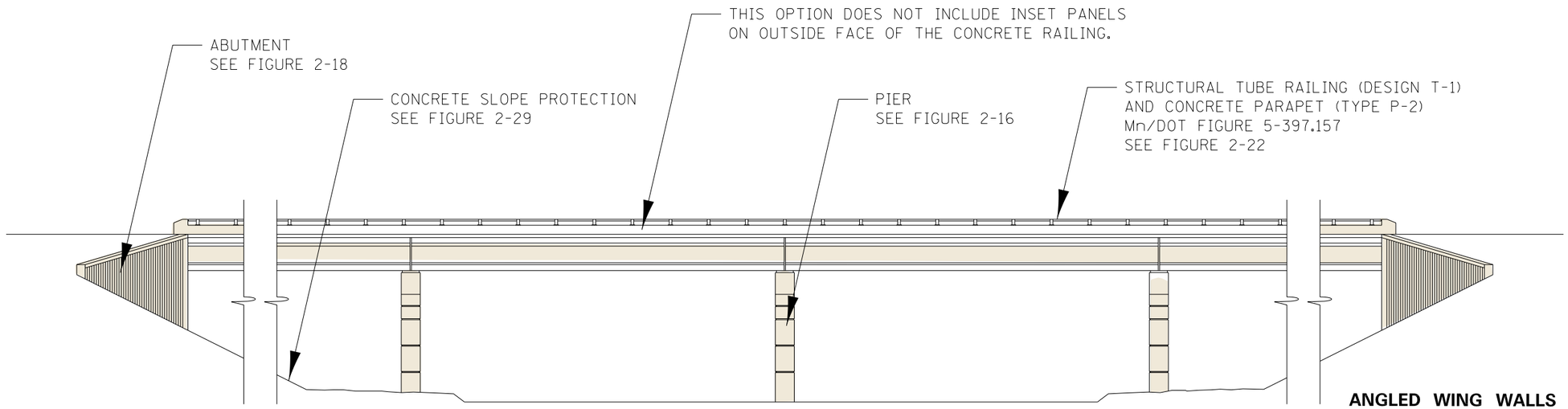
PARALLEL WING WALLS
CASCADE CREEK BRIDGES

NOTES:

- DESIGN ABUTMENTS TO BE THE SAME SIZE AT EACH END OF THE STRUCTURE FOR VISUAL BALANCE IN THE ARCHITECTURAL COMPOSITION.
- SURFACE TREATMENT OF THE ABUTMENT FACE AND WALL EXTENSIONS SHOULD BE CONSISTENT WITH THE ADJACENT RETAINING WALL SURFACE TREATMENT.

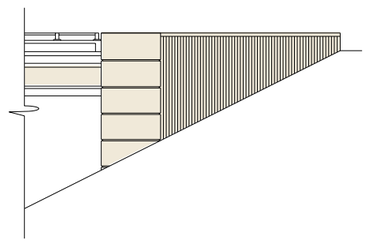
Figure 2–10: BRIDGE ELEVATION

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55059	TH52 SB RAMP OVER CASCADE CREEK	NEW
BRIDGE NO. 55060	TH14 EB LOOP OVER CASCADE CREEK	NEW
BRIDGE NO. 55061	TH52 SB OVER CASCADE CREEK	NEW
BRIDGE NO. 55062	TH52 NB OVER CASCADE CREEK	NEW
BRIDGE NO. 55063	TH14 EB LOOP OVER CASCADE CREEK	NEW
BRIDGE NO. 55064	TH14 EB RAMP OVER CASCADE CREEK	NEW
BRIDGE NO. 55057	TH52 SB OVER ZUMBRO RIVER	NEW/MODIFIED
BRIDGE NO. 55058	TH52 NB OVER ZUMBRO RIVER	NEW/MODIFIED



GENERAL BRIDGE ELEVATION
BRIDGE NO. 55057 SHOWN

ANGLED WING WALLS
ZUMBRO RIVER BRIDGES



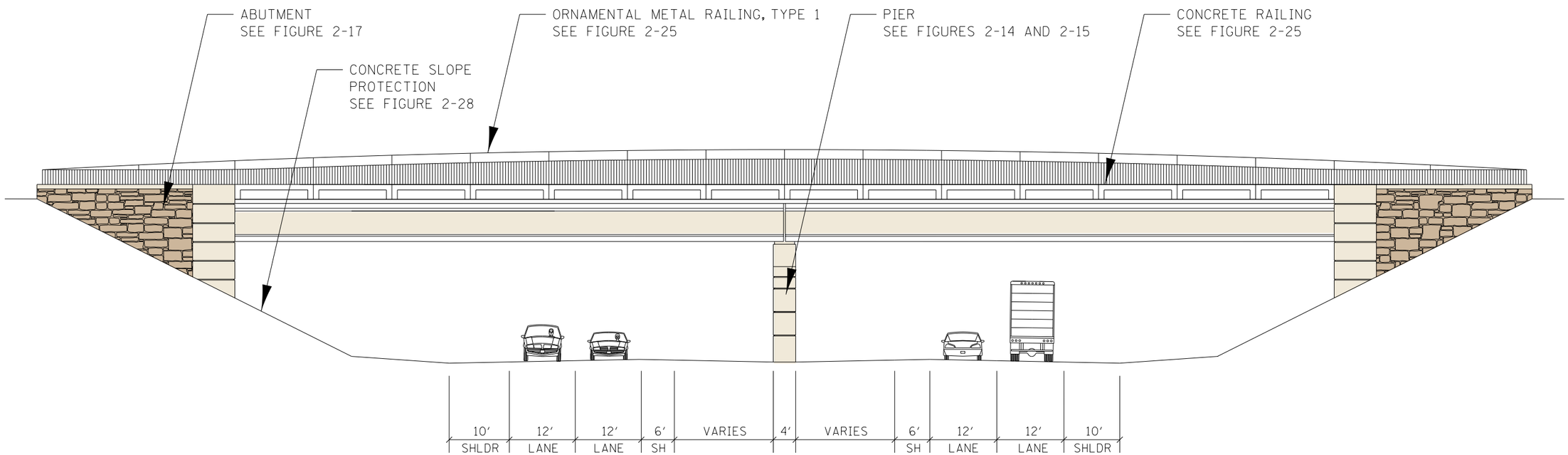
PARALLEL WING WALLS
CASCADE CREEK BRIDGES

NOTES:

- DESIGN ABUTMENTS TO BE THE SAME SIZE AT EACH END OF THE STRUCTURE FOR VISUAL BALANCE IN THE ARCHITECTURAL COMPOSITION.
- SURFACE TREATMENT OF THE ABUTMENT FACE AND WALL EXTENSIONS SHOULD BE CONSISTENT WITH THE ADJACENT RETAINING WALL SURFACE TREATMENT.

Figure 2–10a: BRIDGE ELEVATION
ALTERNATIVE TO FIGURE 2–10

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55071	85TH STREET NW OVER TH52	NEW
BRIDGE NO. 55069	75TH STREET NW OVER TH52	NEW
BRIDGE NO. 55070	65TH STREET NW OVER TH52	NEW
BRIDGE NO. 55067	40TH STREET SW OVER TH63	NEW
BRIDGE NO. 55068	48TH STREET SW OVER TH63	NEW



GENERAL BRIDGE ELEVATION

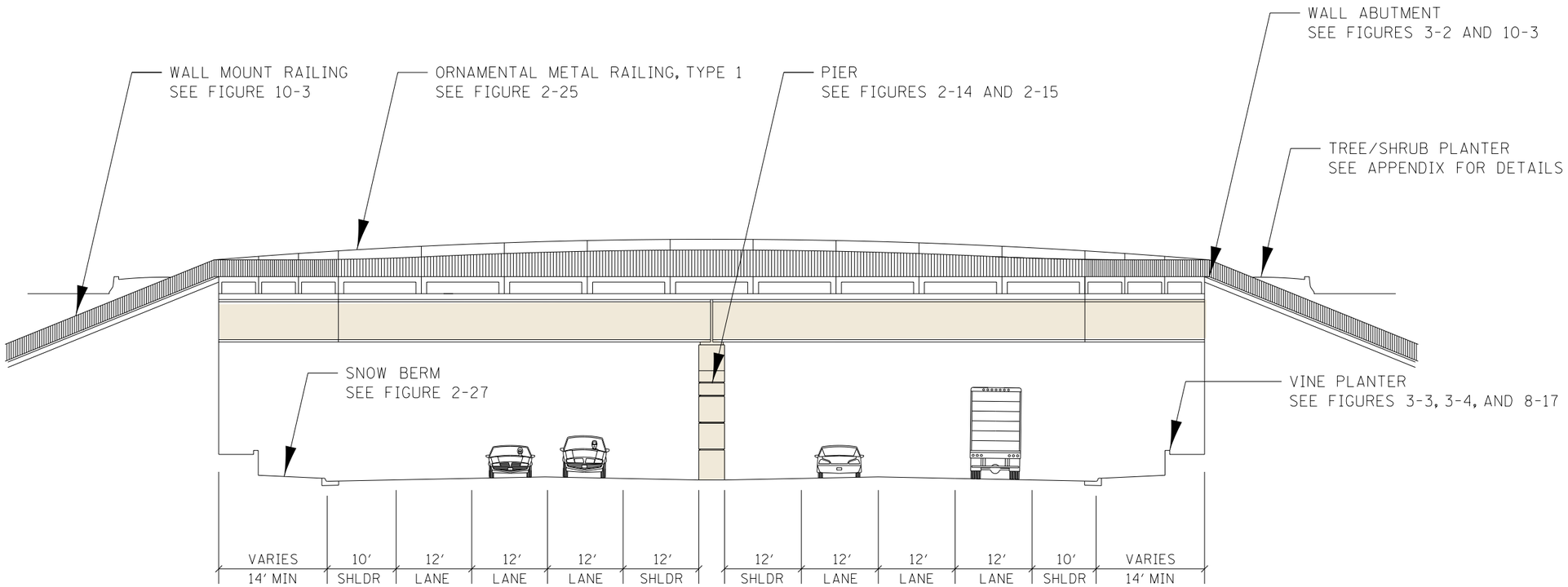
BRIDGE NO. 55068 SHOWN

NOTES:

- LOCATE ABUTMENTS AS CLOSE TO THE ROADWAY AS POSSIBLE TO REDUCE THE SIZE OF THE OPENING BENEATH THE BRIDGE (IE, AT CLEAR ZONE LIMIT).
- DESIGN ABUTMENTS TO BE THE SAME SIZE AT EACH END OF THE STRUCTURE FOR VISUAL BALANCE IN THE ARCHITECTURAL COMPOSITION.
- THE LENGTH OF INDIVIDUAL PARAPET PANELS SHOULD BE EQUAL ACROSS THE SPAN LENGTH OF THE BRIDGE.
- THE CLEAR HEIGHT-DEPTH PROPORTION BETWEEN EXPOSED ABUTMENT AND BEAM DEPTH SHOULD NOT EXCEED A 2:1 RATIO.
- CONCRETE RAILING DESIGN SHOWN MAY REQUIRE POST TENSIONING.
- METAL RAILING DESIGN SHOWN MAY REQUIRE ADDITIONAL POSTS. DESIGN TO EMPHASIZE TOP RAIL CHORDS.

Figure 2–11: BRIDGE ELEVATION

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55043	19TH STREET NW OVER TH52	NEW



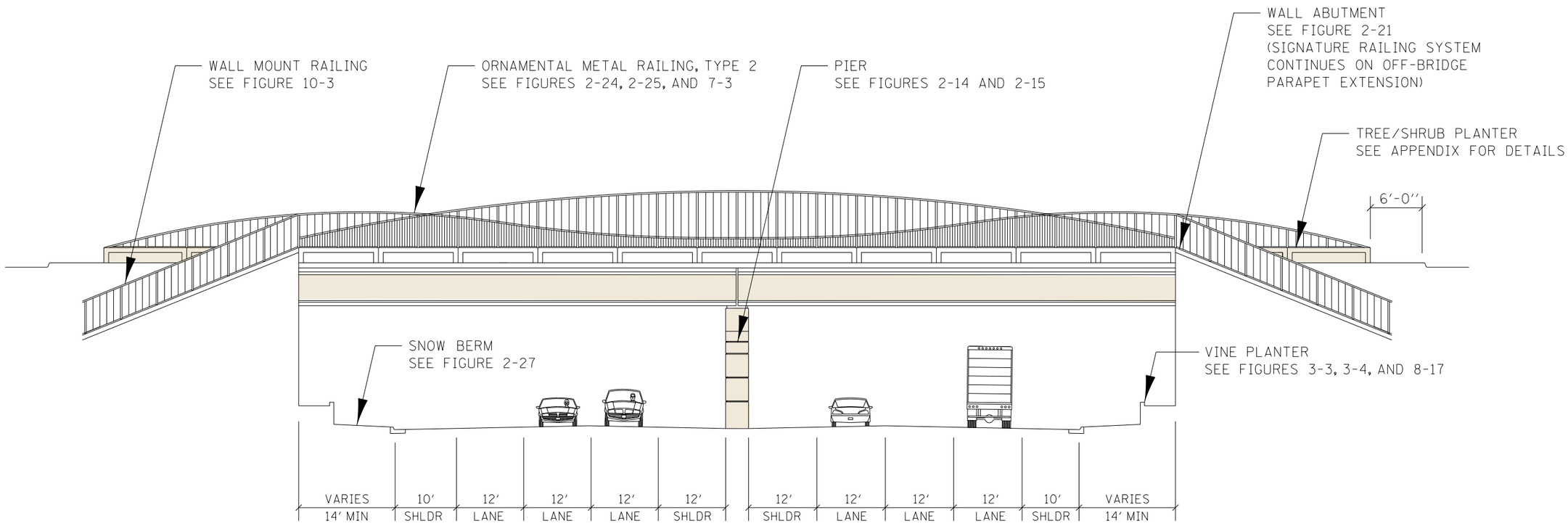
BRIDGE ELEVATION

NOTES:

- LOCATE ABUTMENTS AS CLOSE TO THE ROADWAY AS POSSIBLE TO REDUCE THE SIZE OF THE OPENING BENEATH THE BRIDGE (IE, AT CLEAR ZONE LIMIT).
- SEE APPENDIX FOR ADDITIONAL DETAILS.
- CONCRETE RAILING DESIGN SHOWN MAY REQUIRE POST TENSIONING.
- SURFACE TREATMENT OF THE ABUTMENT FACE AND WALL EXTENSIONS SHOULD BE CONSISTENT WITH THE ADJACENT RETAINING WALL SURFACE TREATMENT.
- METAL RAILING DESIGN SHOWN MAY REQUIRE ADDITIONAL POSTS. DESIGN TO EMPHASIZE TOP RAIL CHORDS.

Figure 2–12: BRIDGE ELEVATION

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55051 BRIDGE NO. 55052	2ND STREET SW OVER TH52 6TH STREET SW OVER TH52	NEW NEW

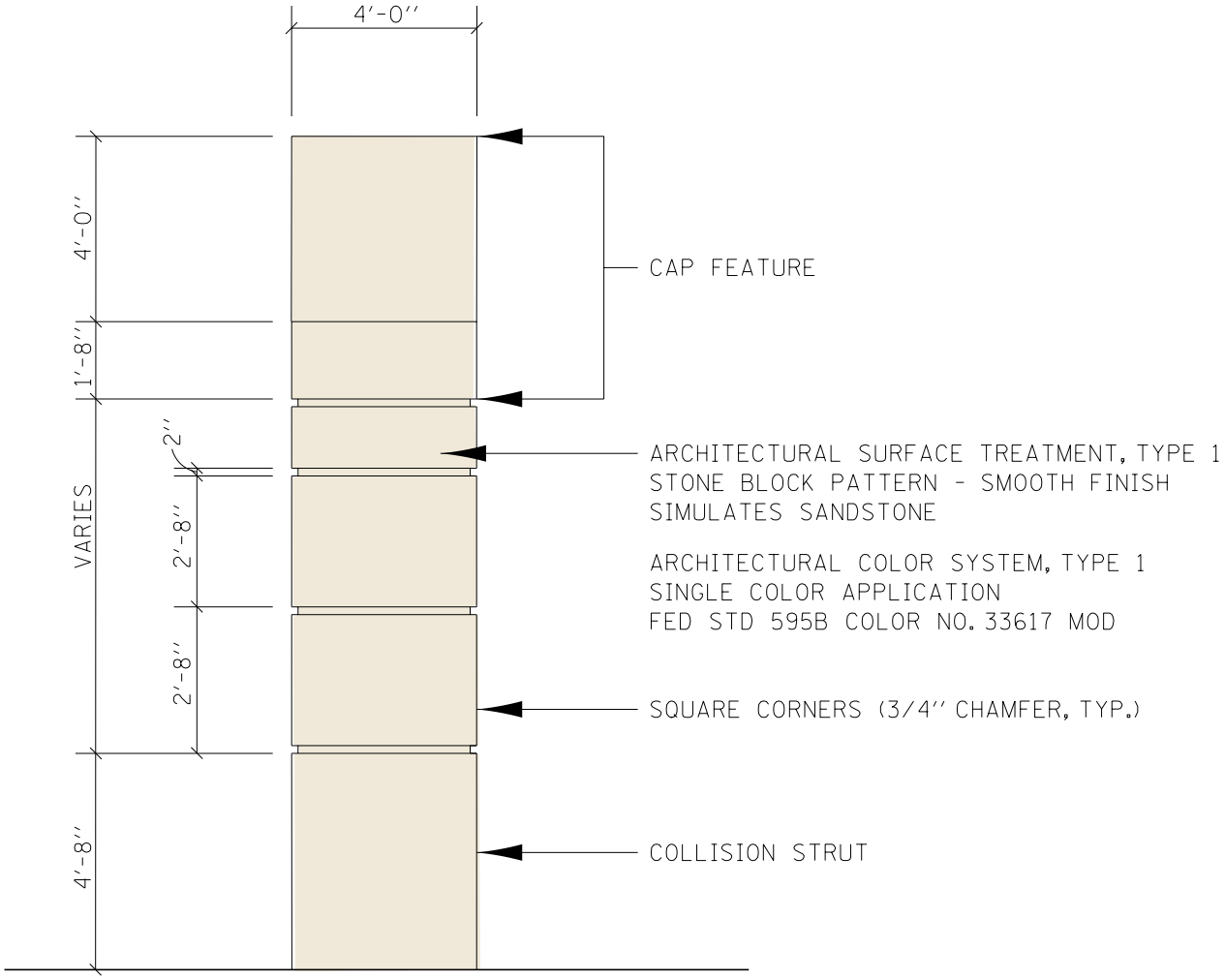


BRIDGE ELEVATION
BRIDGE NO. 55051 SHOWN

NOTES:

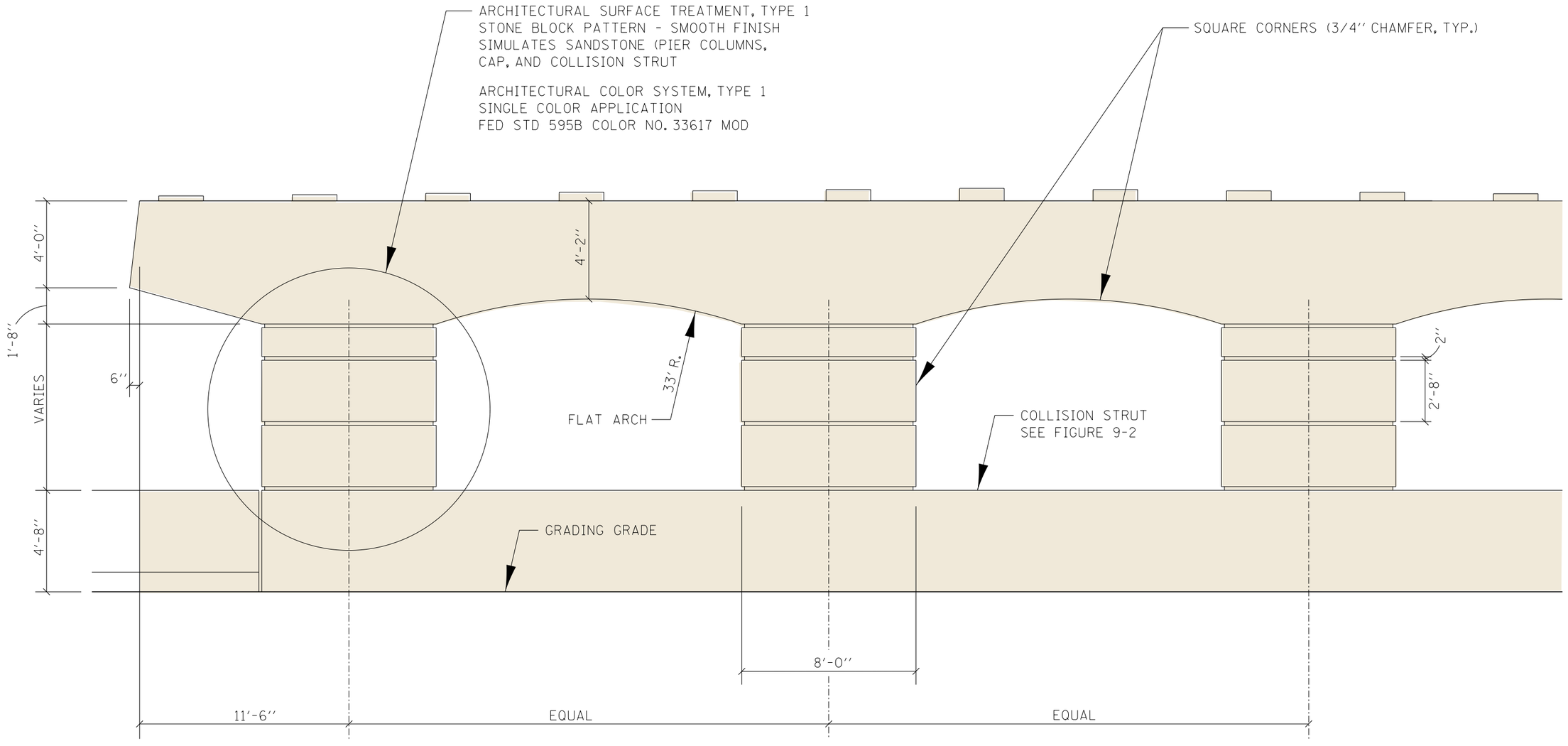
- LOCATE ABUTMENTS AS CLOSE TO THE ROADWAY AS POSSIBLE TO REDUCE THE SIZE OF THE OPENING BENEATH THE BRIDGE (IE, AT CLEAR ZONE LIMIT).
- SURFACE TREATMENT OF THE ABUTMENT FACE AND WALL EXTENSIONS SHOULD BE CONSISTENT WITH THE ADJACENT RETAINING WALL SURFACE TREATMENT.
- CONCRETE RAILING DESIGN SHOWN MAY REQUIRE POST TENSIONING.
- METAL RAILING DESIGN SHOWN MAY REQUIRE ADDITIONAL POSTS. DESIGN TO EMPHASIZE TOP RAIL CHORDS.

Figure 2–13: BRIDGE ELEVATION



GENRAL PIER SECTION

Figure 2–14: PIER DESIGN



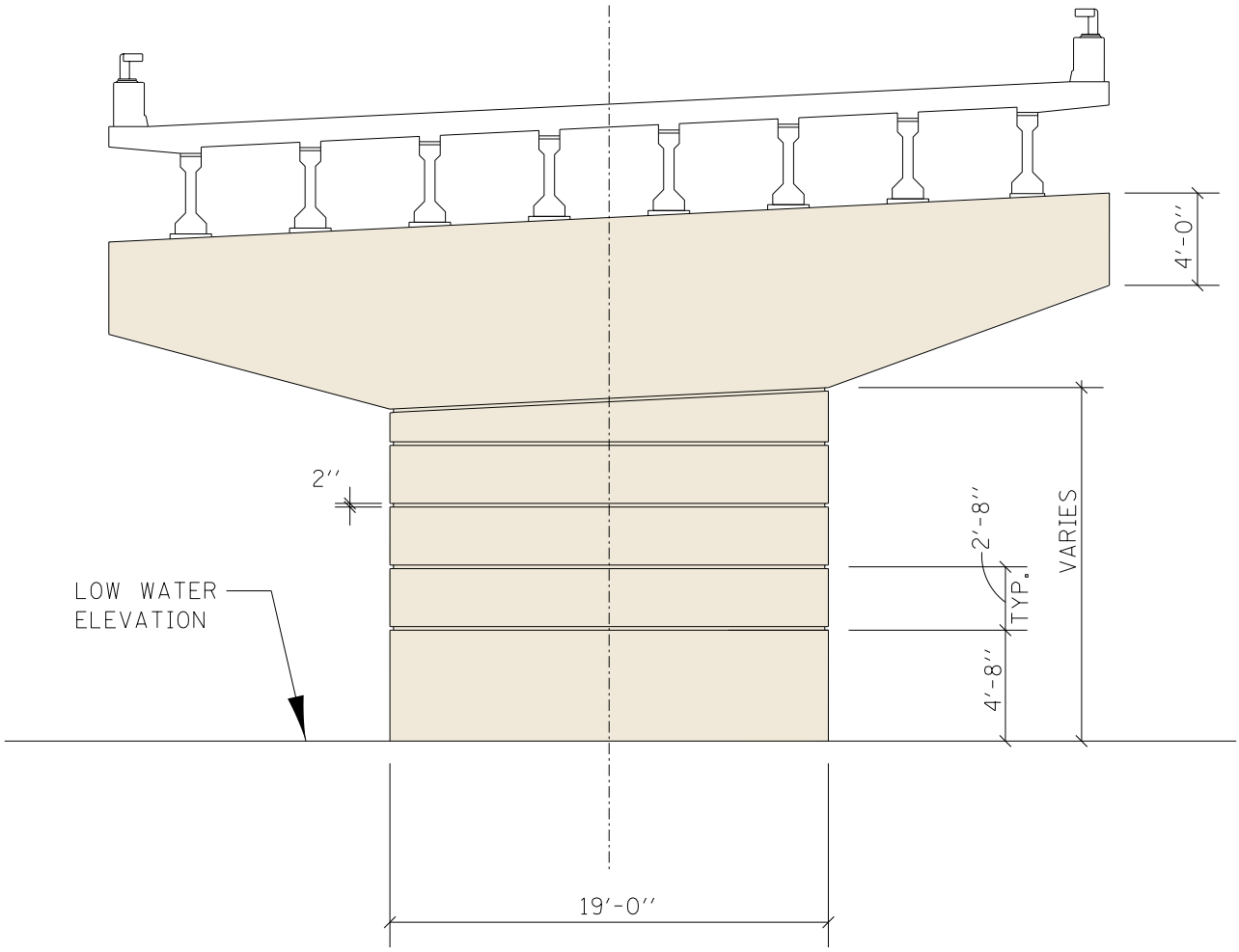
GENERAL PIER ELEVATION

NOTES:

- THIS DESIGN IS INTENDED FOR ALL NEW BRIDGE CONSTRUCTION.
- COLUMN WIDTH SHOULD REMAIN CONSTANT THOROUGH THE HIGHWAY CORRIDOR (SEE FIGURE 2-12).
- COLUMN LENGTH MAY VARY BASED ON THE SCALE AND PROPORTION OF EACH BRIDGE IN RELATION TO THE SIZE OF THE OPENINGS BETWEEN PIER COLUMNS.
- PROVIDE FOUR COLUMNS MINIMUM PER STRUCTURE AS REQUIRED TO ACHIEVE FLAT ARCH ON CAP BOTTOM SHOWN.

Figure 2–15: PIER DESIGN

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55057 BRIDGE NO. 55058	TH52 SB OVER ZUMBRO RIVER TH52 NB OVER ZUMBRO RIVER	NEW NEW



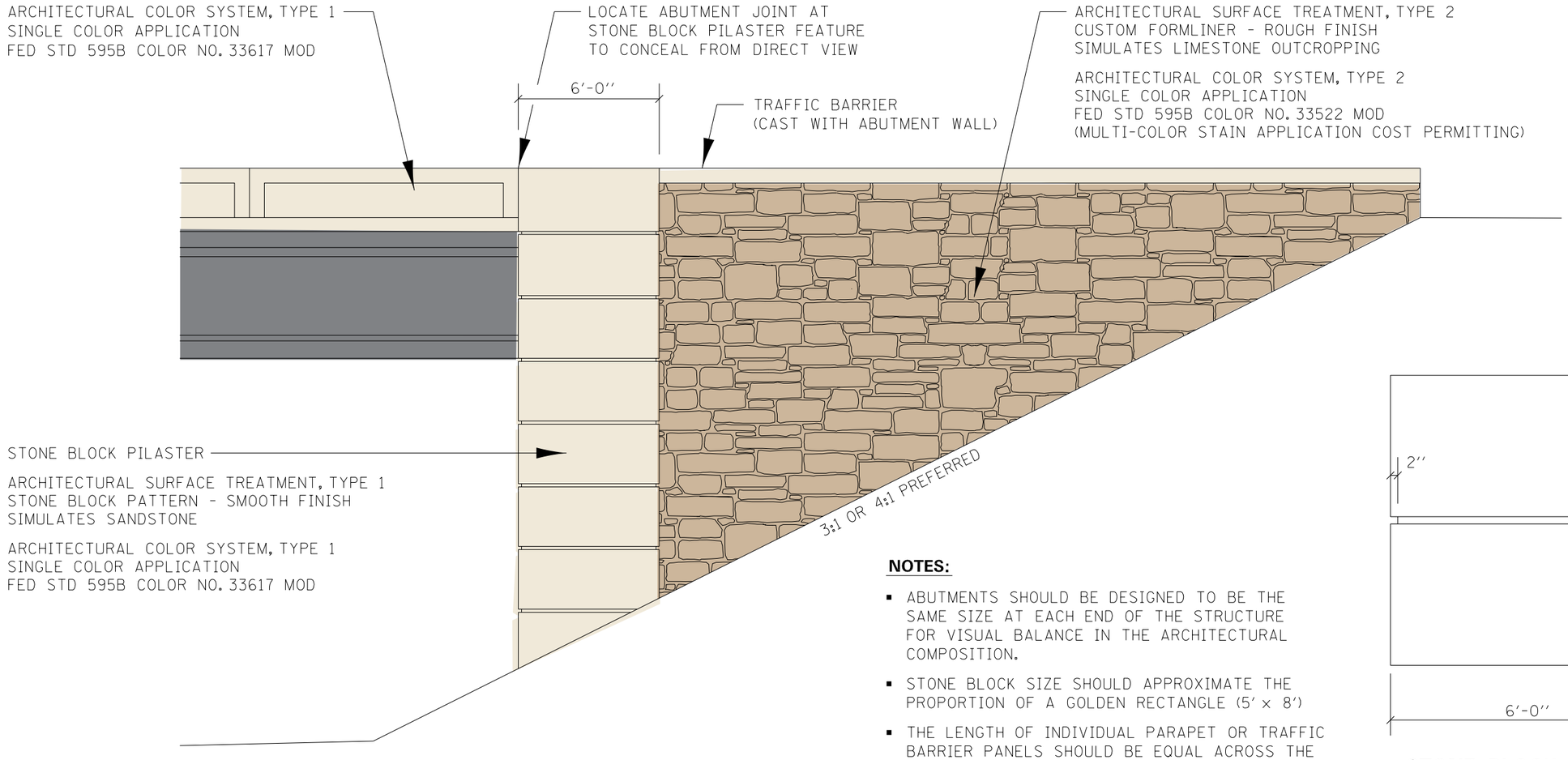
GENERAL PIER ELEVATION

BRIDGE NO. 55058

NOTE:

DIMENSIONS SHOWN MAY VARY AND ARE INCLUDED FOR SCALE RELATIONSHIP ONLY.

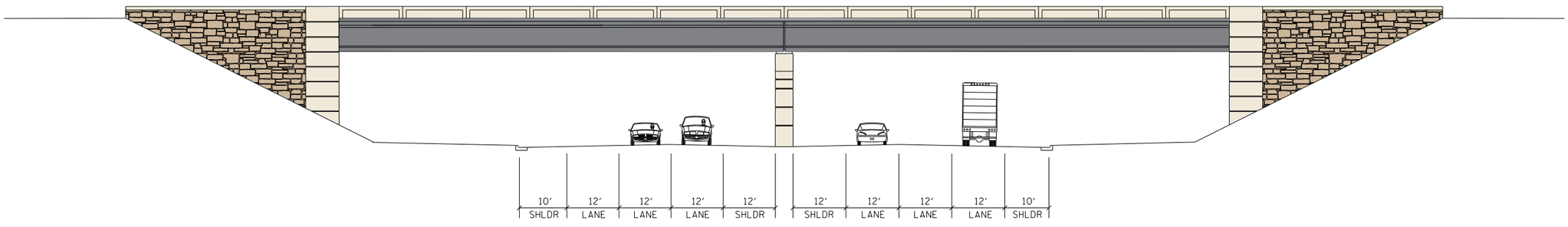
Figure 2–16: PIER DESIGN



NOTES:

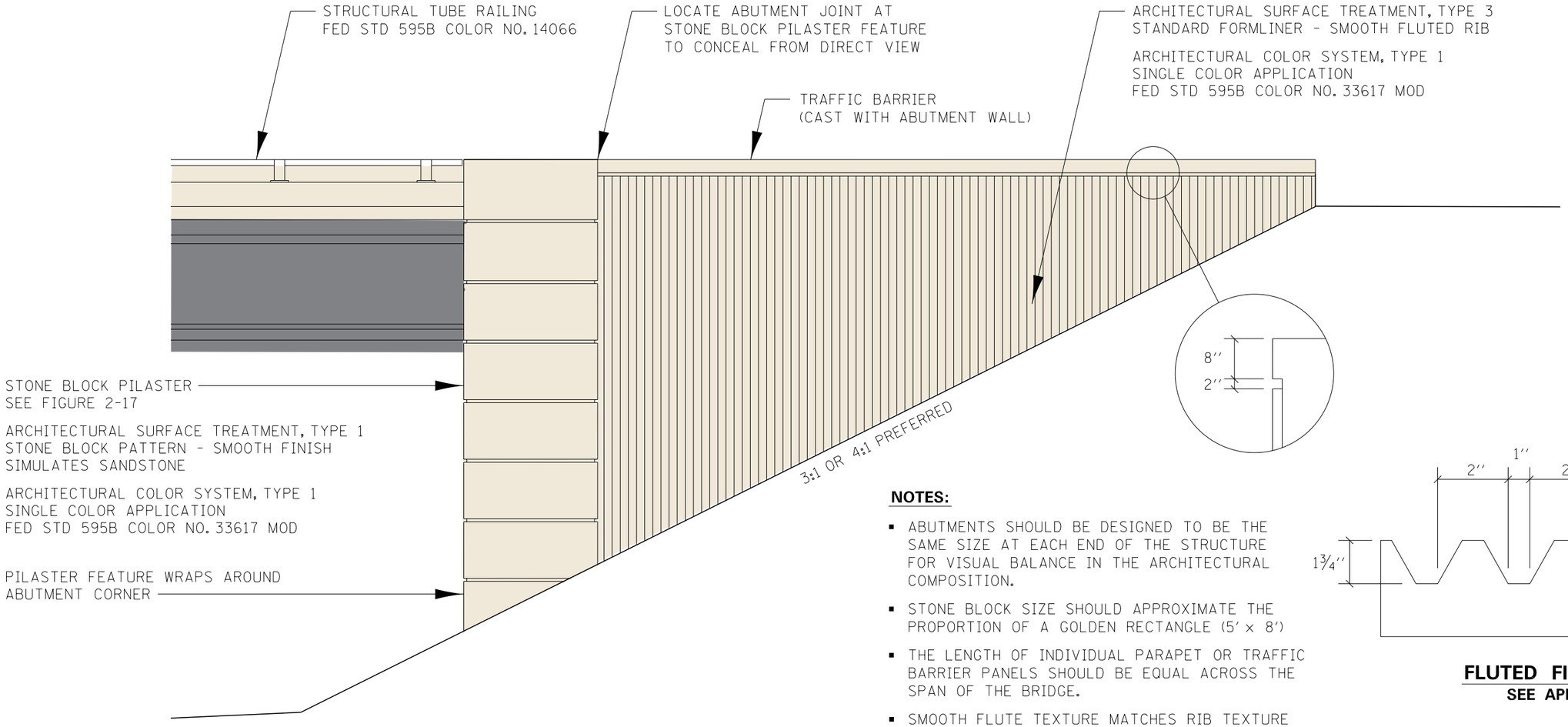
- ABUTMENTS SHOULD BE DESIGNED TO BE THE SAME SIZE AT EACH END OF THE STRUCTURE FOR VISUAL BALANCE IN THE ARCHITECTURAL COMPOSITION.
- STONE BLOCK SIZE SHOULD APPROXIMATE THE PROPORTION OF A GOLDEN RECTANGLE (5' x 8')
- THE LENGTH OF INDIVIDUAL PARAPET OR TRAFFIC BARRIER PANELS SHOULD BE EQUAL ACROSS THE SPAN OF THE BRIDGE.

STONE BLOCK DETAIL



GENERAL BRIDGE ELEVATION

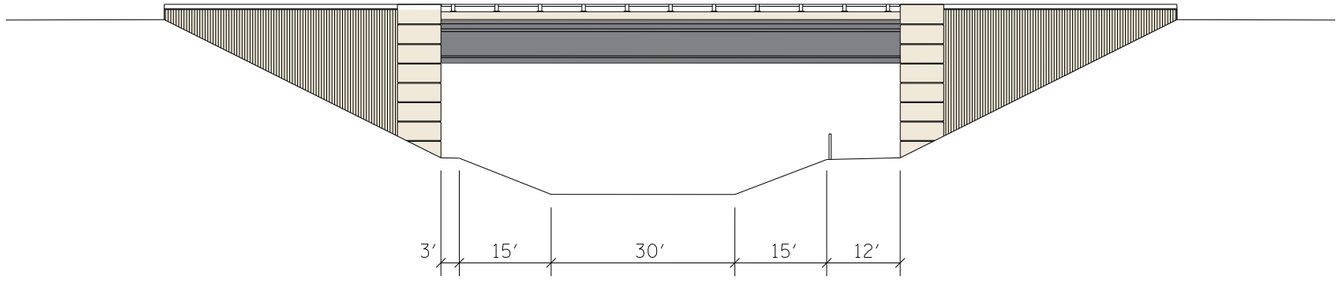
Figure 2–17: ABUTMENT DESIGN



NOTES:

- ABUTMENTS SHOULD BE DESIGNED TO BE THE SAME SIZE AT EACH END OF THE STRUCTURE FOR VISUAL BALANCE IN THE ARCHITECTURAL COMPOSITION.
- STONE BLOCK SIZE SHOULD APPROXIMATE THE PROPORTION OF A GOLDEN RECTANGLE (5′ × 8′)
- THE LENGTH OF INDIVIDUAL PARAPET OR TRAFFIC BARRIER PANELS SHOULD BE EQUAL ACROSS THE SPAN OF THE BRIDGE.
- SMOOTH FLUTE TEXTURE MATCHES RIB TEXTURE CONSTRUCTED ON ROCHESTER'S FLOOD CONTROL PROJECT.

FLUTED FIN DETAIL
SEE APPENDIX

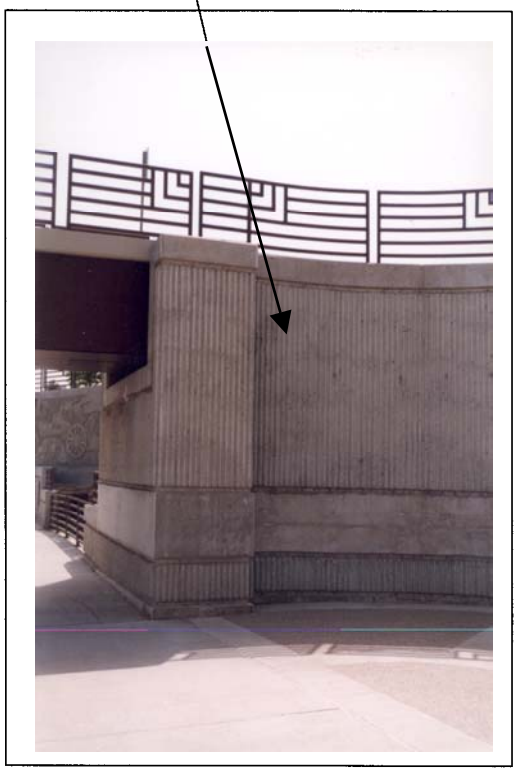


GENERAL BRIDGE ELEVATION
CASCADE CREEK

Figure 2–18: ABUTMENT DESIGN

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW/MODIFIED
BRIDGE NO. 55059	TH52 SB RAMP OVER CASCADE CREEK	NEW
BRIDGE NO. 55060	TH14 EB LOOP OVER CASCADE CREEK	NEW
BRIDGE NO. 55061	TH52 SB OVER CASCADE CREEK	NEW
BRIDGE NO. 55062	TH52 NB OVER CASCADE CREEK	NEW
BRIDGE NO. 55063	TH14 EB LOOP OVER CASCADE CREEK	NEW
BRIDGE NO. 55064	TH14 EB RAMP OVER CASCADE CREEK	NEW
BRIDGE NO. 55057	TH52 SB OVER ZUMBRO RIVER	NEW/MODIFIED
BRIDGE NO. 55058	TH52 NB OVER ZUMBRO RIVER	NEW/MODIFIED

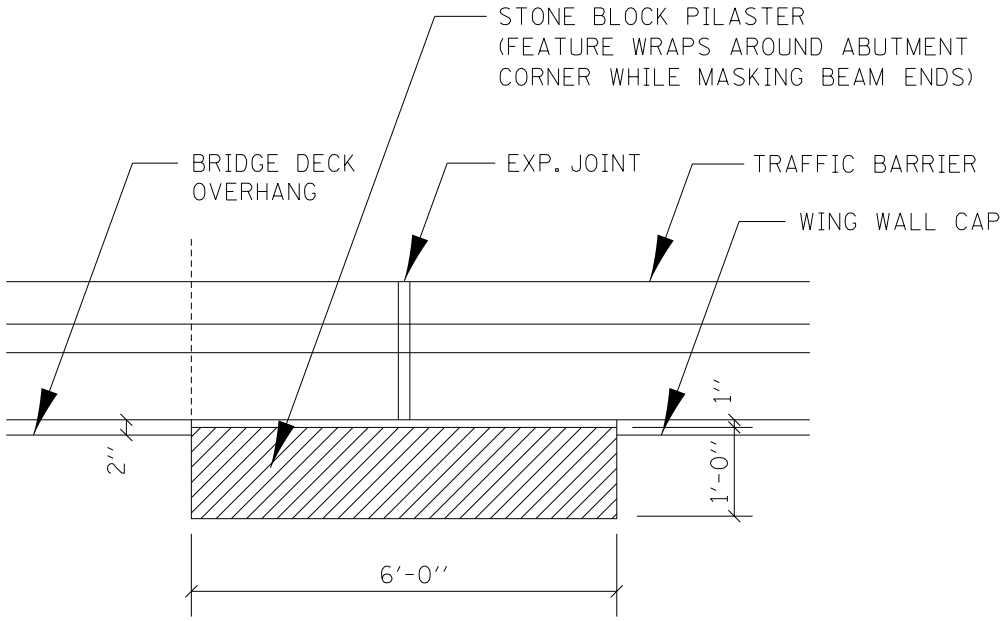
ON THIS PROJECT, THIS PILASTER FEATURE HAS BEEN REPLACED BY THE PILASTER DESIGN SHOWN ON FIGURES 2-18 AND 2-19.



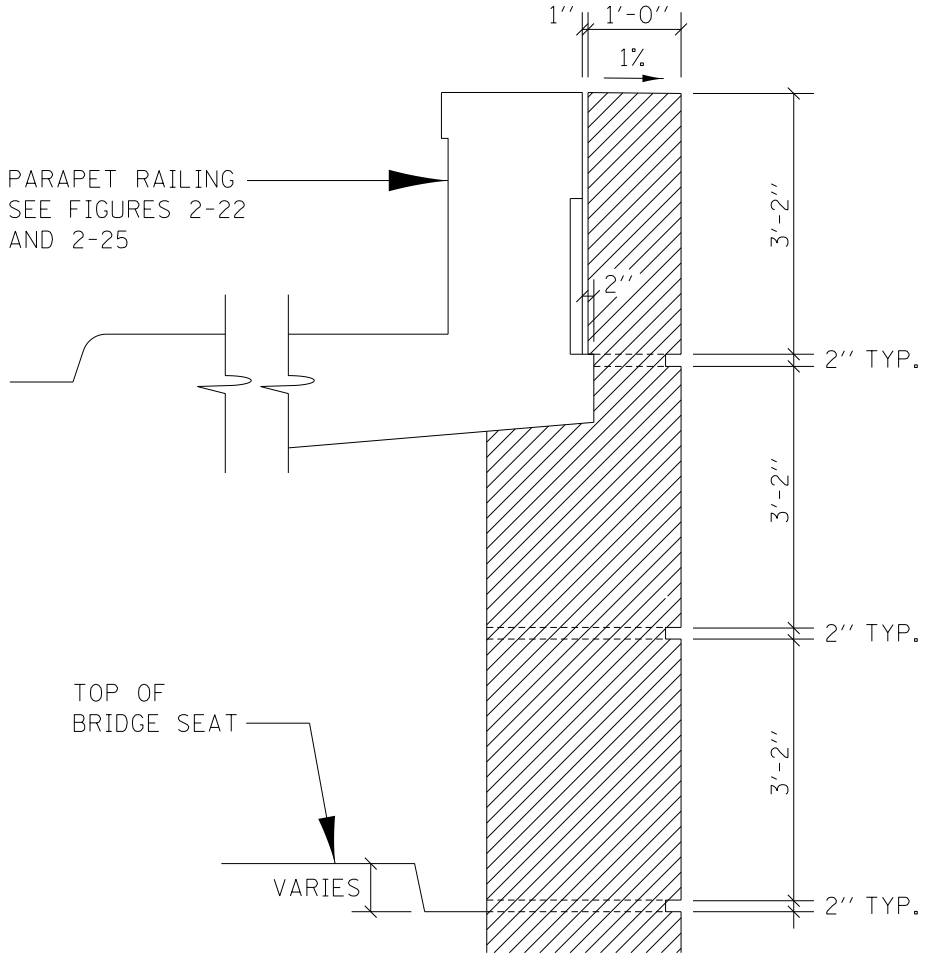
ROCHESTER'S FLOOD CONTROL PROJECT

SIDE VIEW

Figure 2-18a: ABUTMENT DESIGN

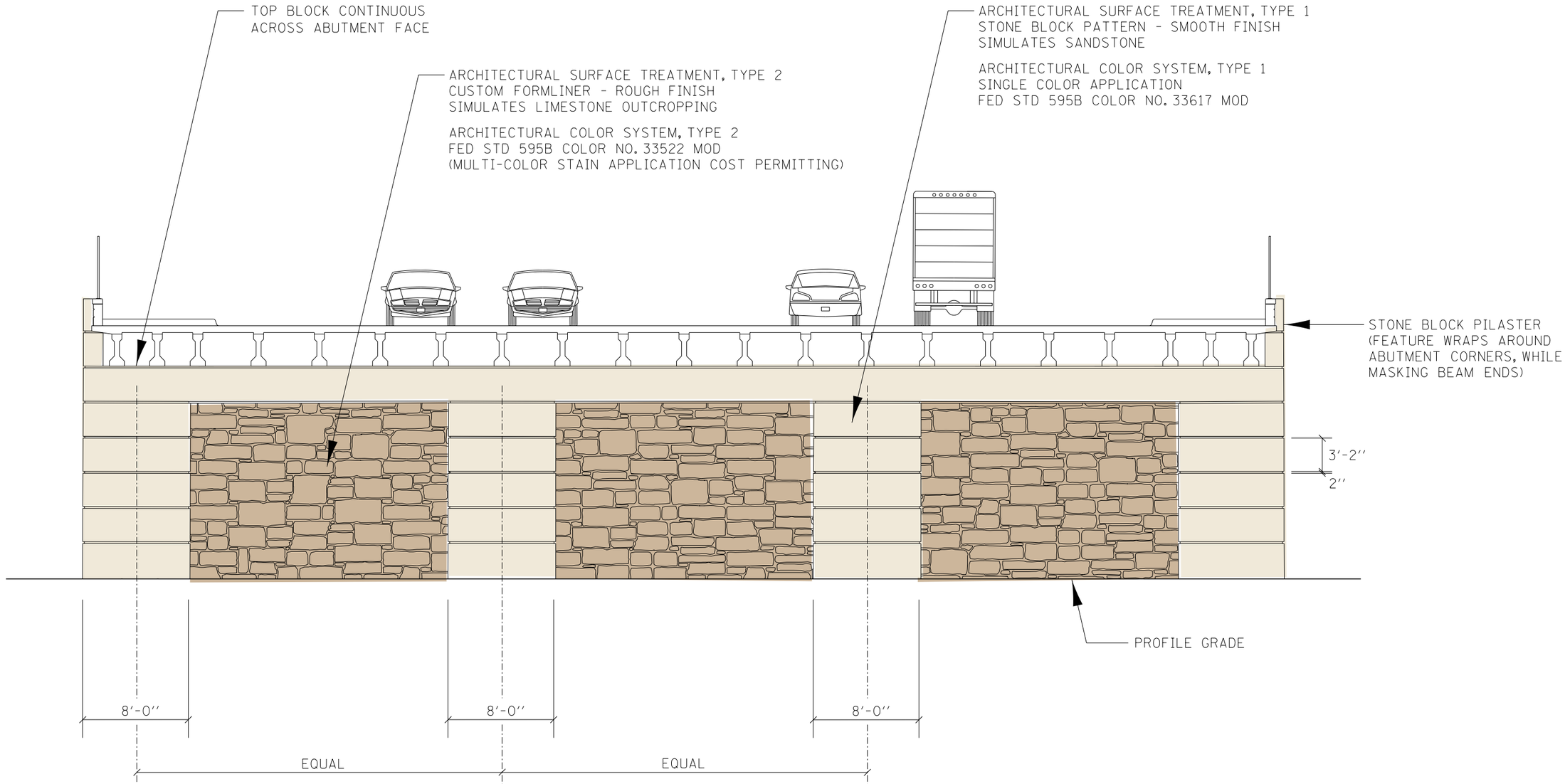


PLAN VIEW



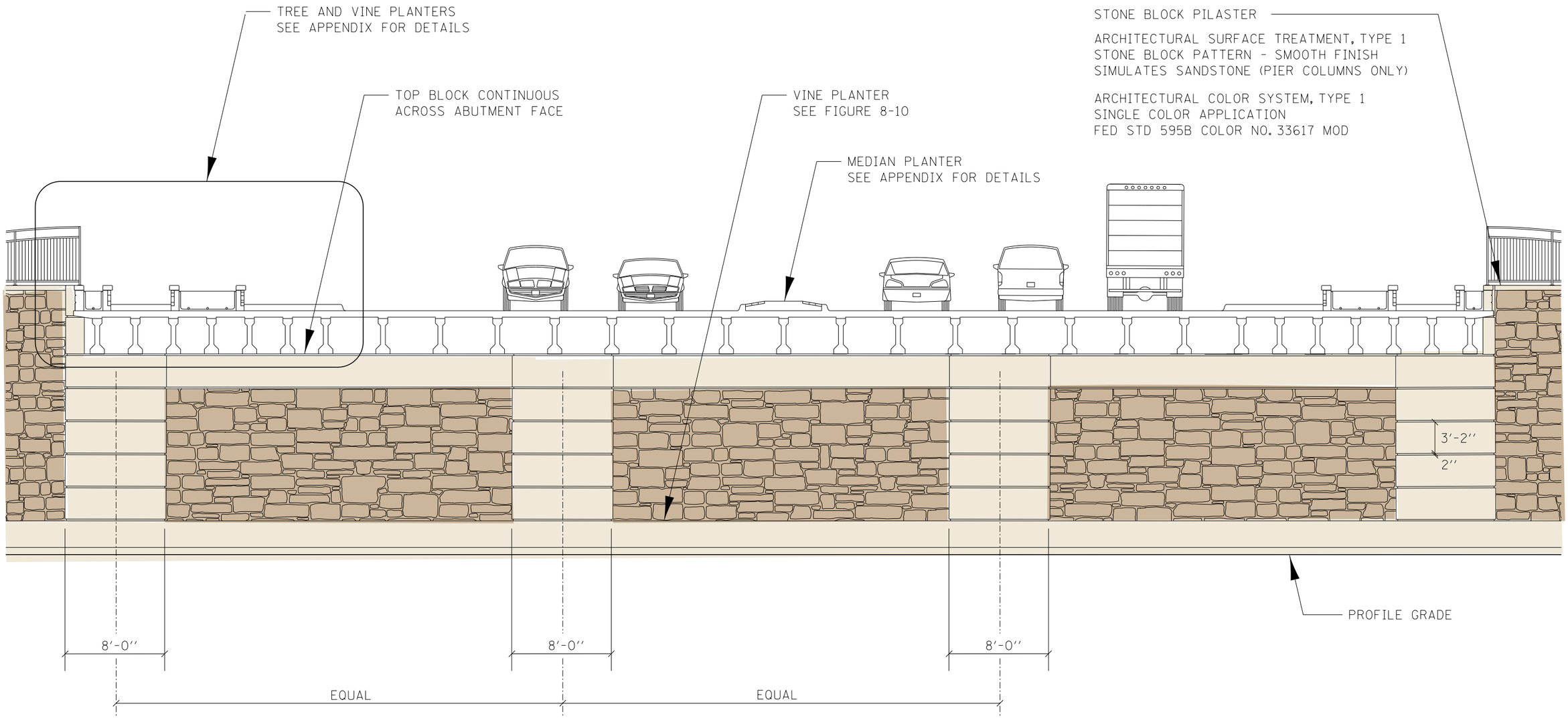
SIDE VIEW

Figure 2–19: PILASTER DETAILS



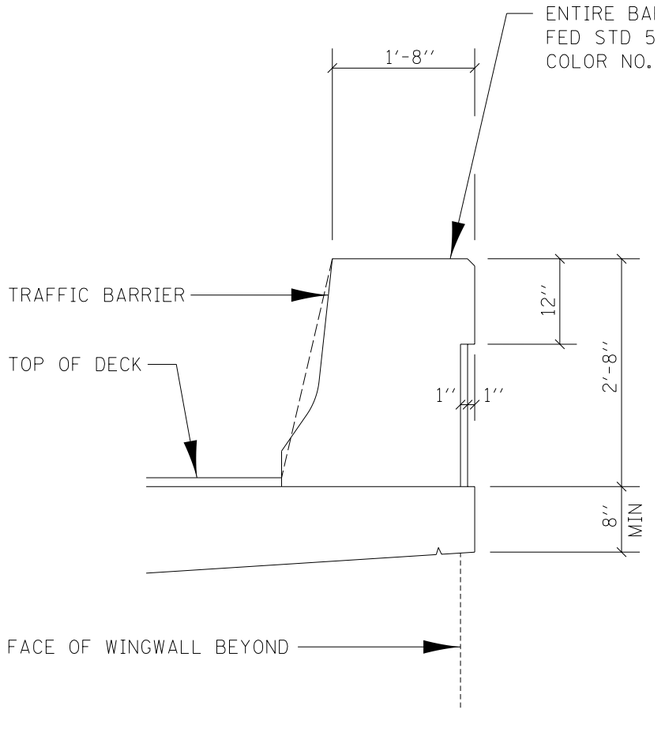
GENERAL ABUTMENT ELEVATION

Figure 2–20: ABUTMENT DESIGN



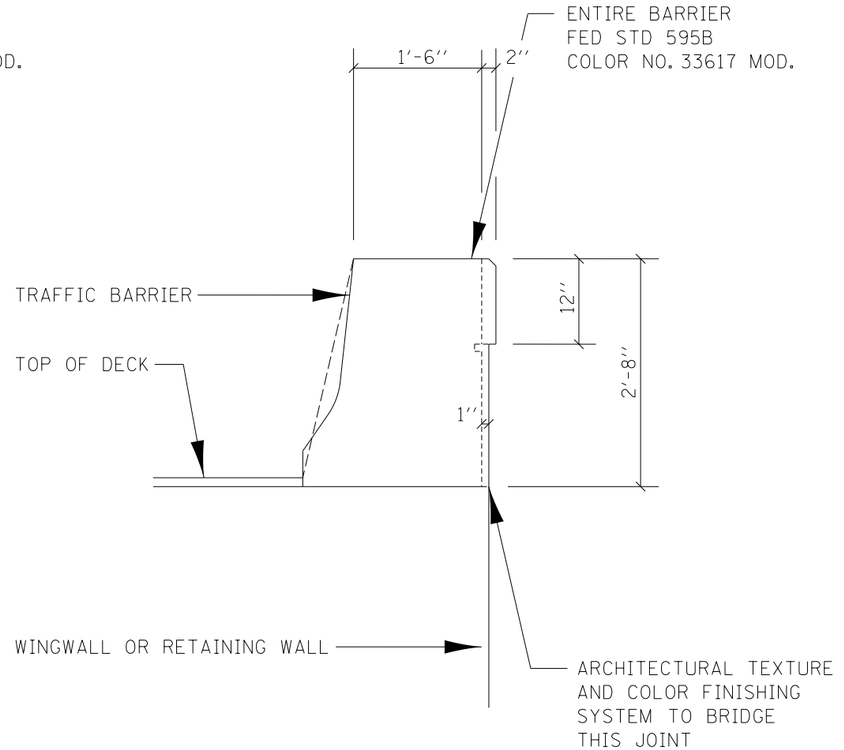
ABUTMENT ELEVATION
BRIDGE NO. 55051 SHOWN
(2ND STREET S.W. OVER T.H. 52)

Figure 2–21: ABUTMENT DESIGN



SECTION A–A
(ON BRIDGE)

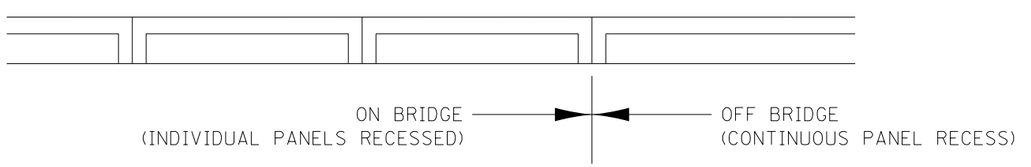
- PROVIDE CONSTANT SLOPE INSIDE FACE AND SIMULATE RECESSED PANELS IF POSSIBLE



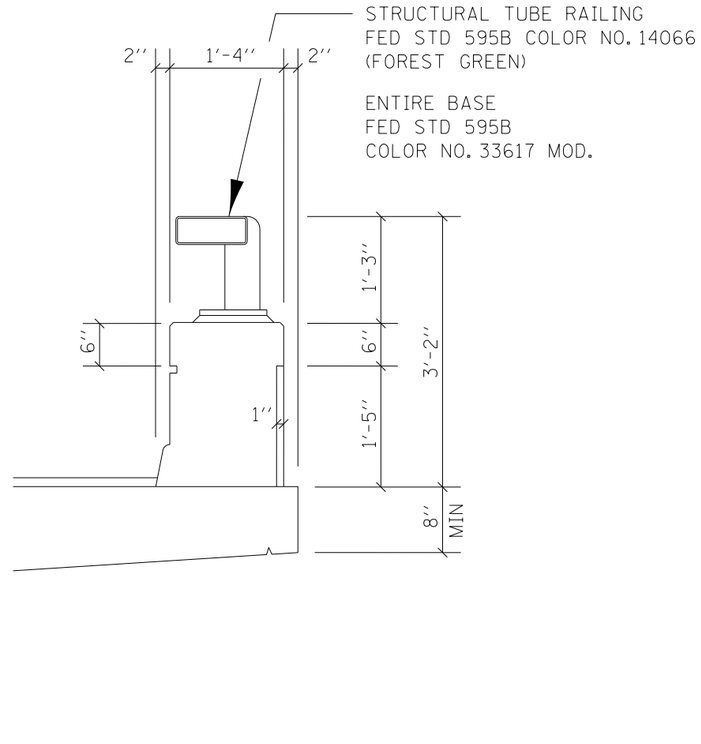
SECTION B–B
(OFF BRIDGE)

- PROVIDE CONSTANT SLOPE INSIDE FACE AND SIMULATE RECESSED PANELS IF POSSIBLE
- PROVIDE GROOVE FEATURE ON OUTSIDE FACE TO SIMULATE CONTINUOUS PANEL RECESS (SEE SKETCH A BELOW)

TYPE F BARRIER (MODIFIED)



SKETCH A

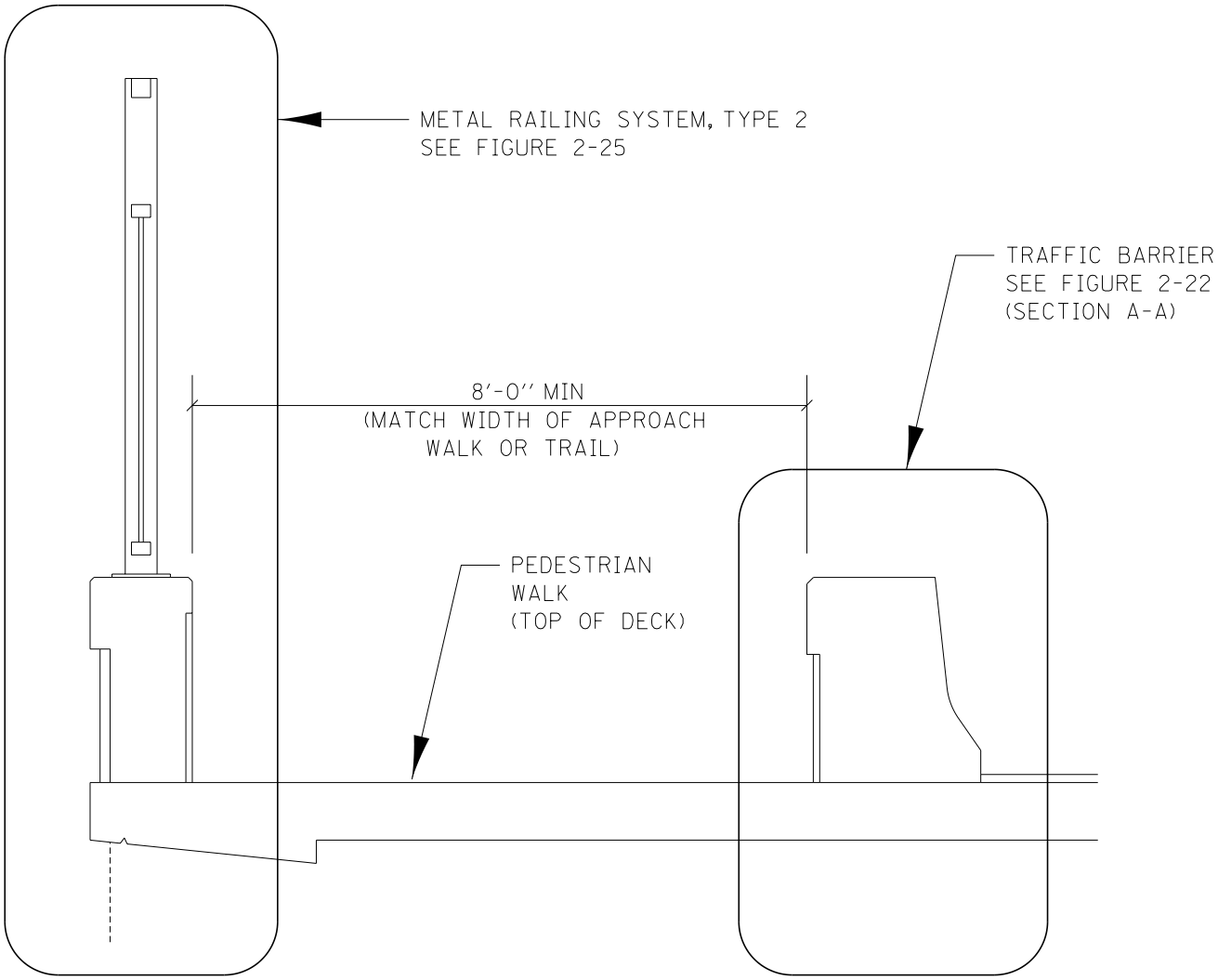


SECTION C–C
(FOR SEE–THROUGH BRIDGE RAILS)

- APPLIES TO INSIDE AND OUTSIDE RAILINGS

STRUCTURAL TUBE RAILING

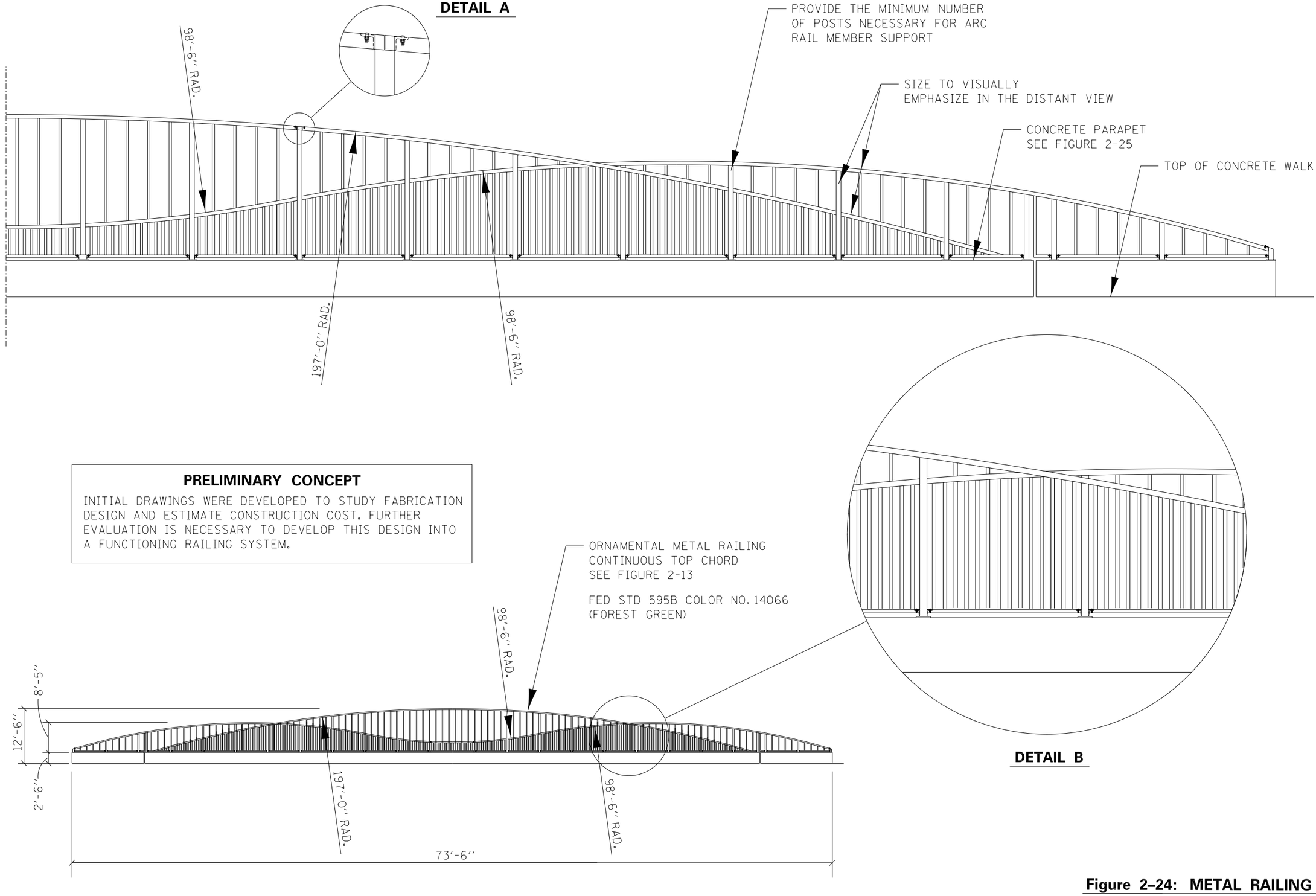
Figure 2–22: TRAFFIC BARRIER DESIGN



SECTION

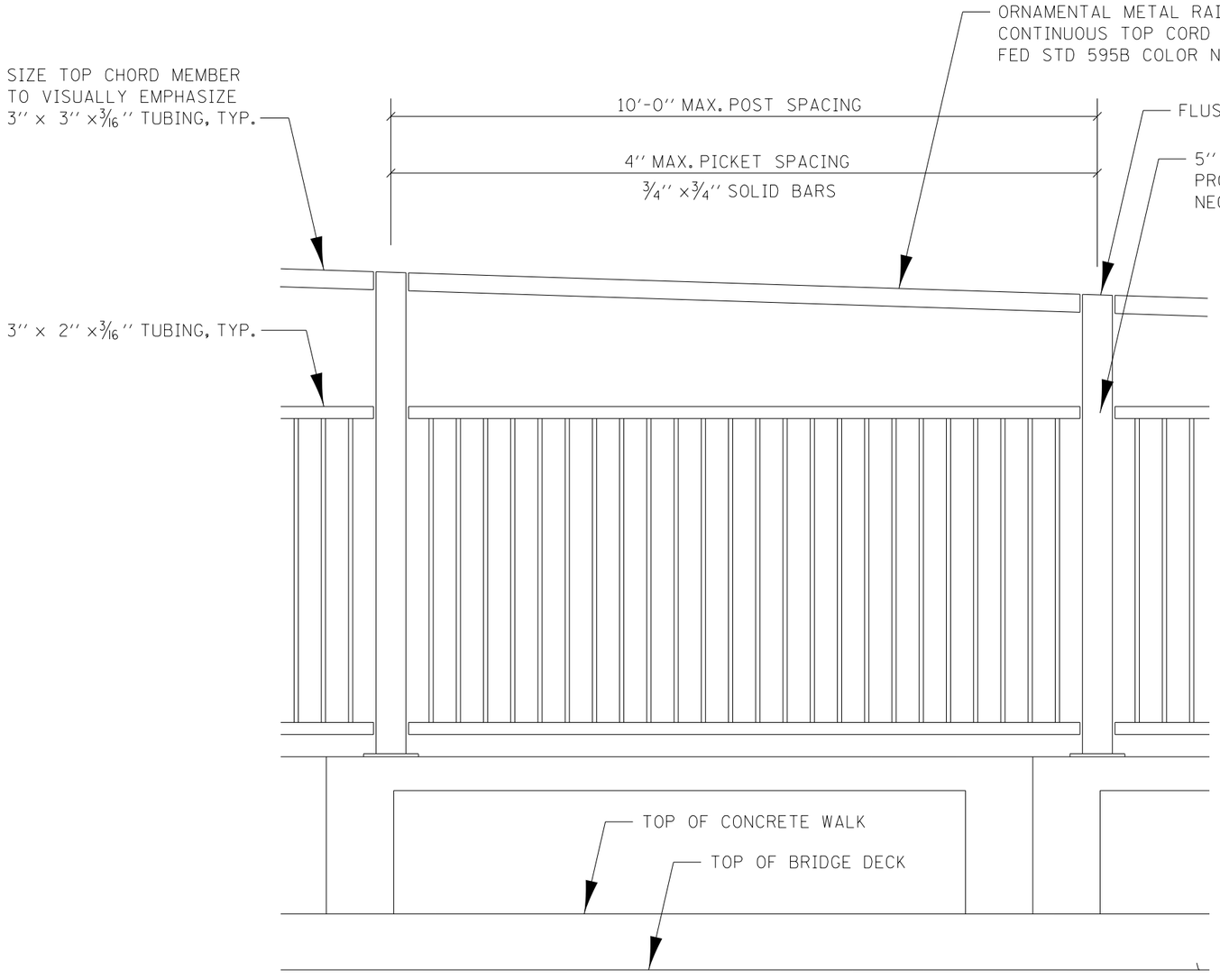
BRIDGE NO. 55068
(48TH STREET S.W. OVER T.H. 63)

Figure 2–23: TRAFFIC BARRIER DESIGN

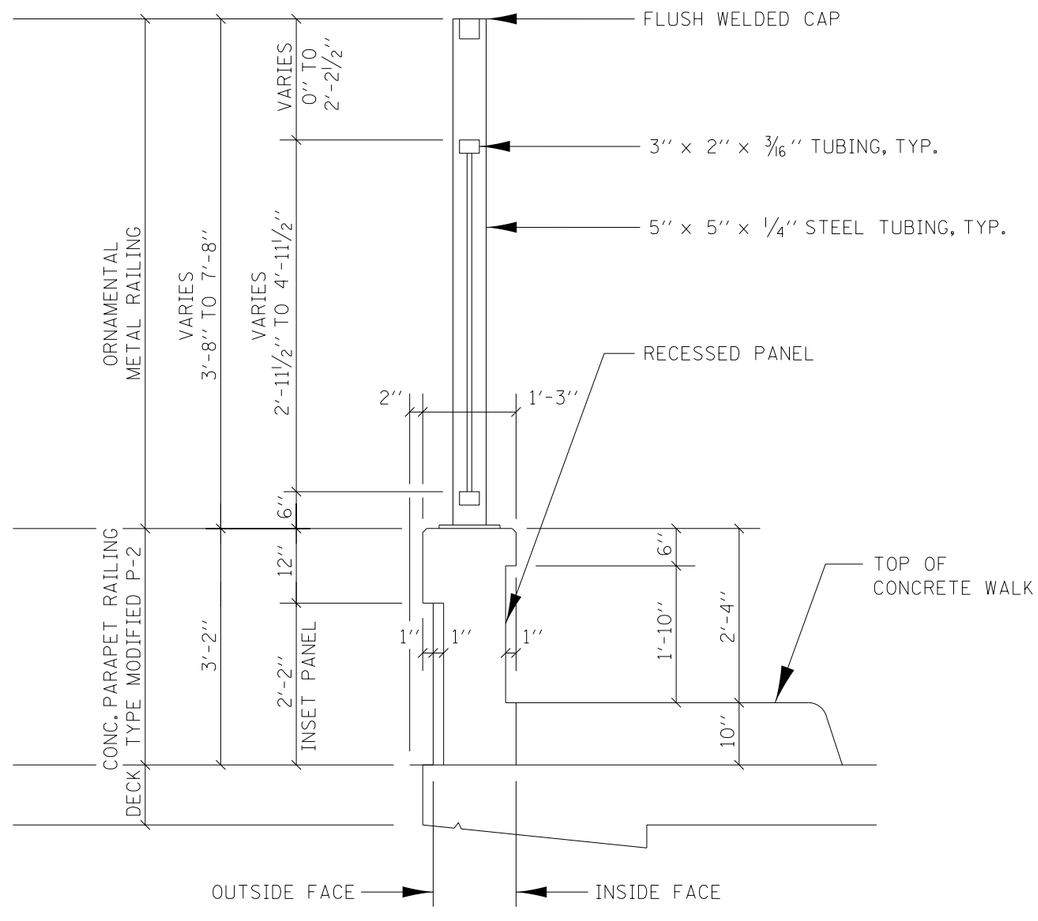


ELEVATION
TYPE 2 RAILING SHOWN

Figure 2–24: METAL RAILING DESIGN



ELEVATION
TYPE 1 RAILING SHOWN



SECTION

Figure 2–25: METAL RAILING DESIGN

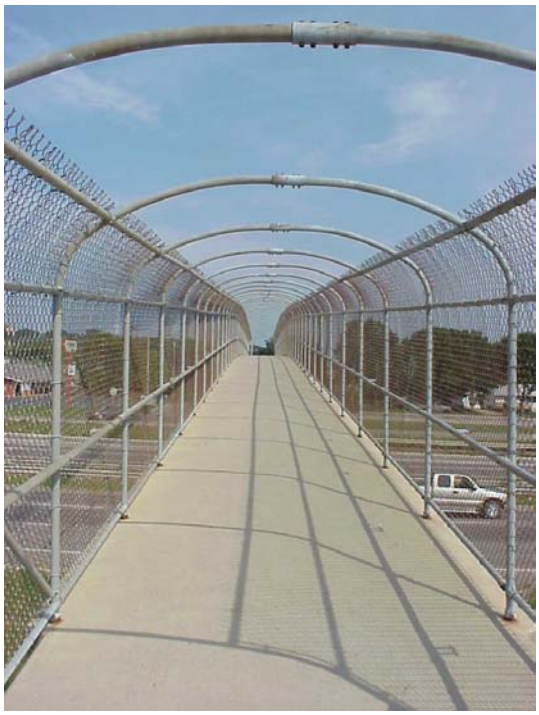
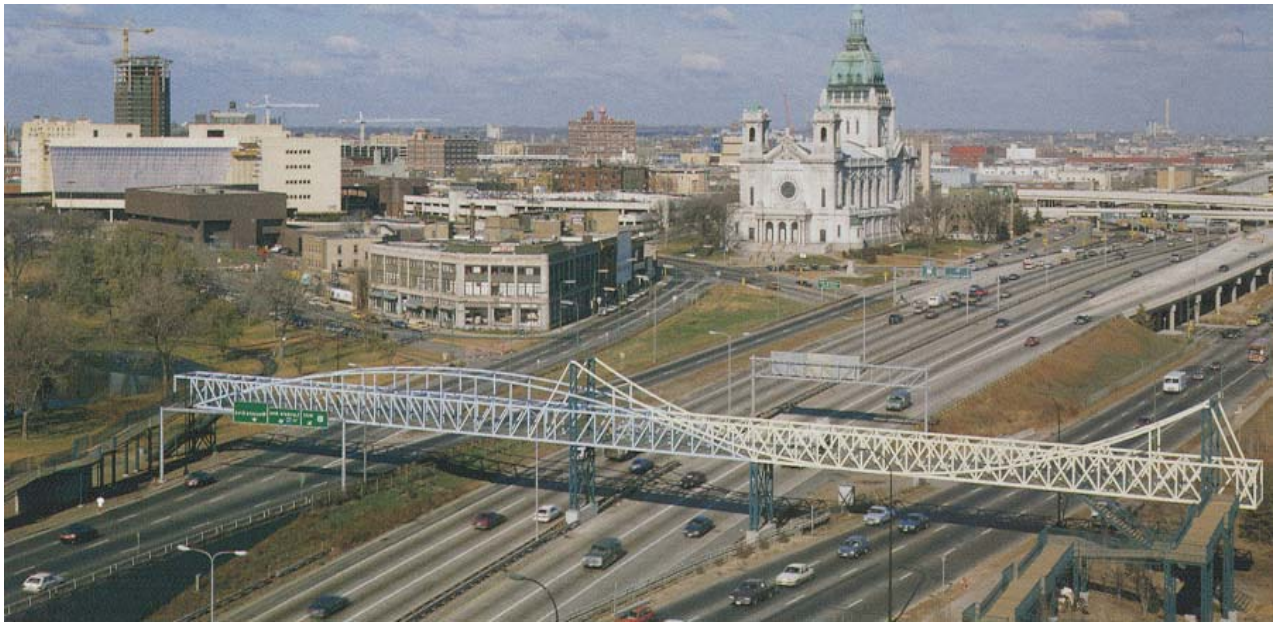


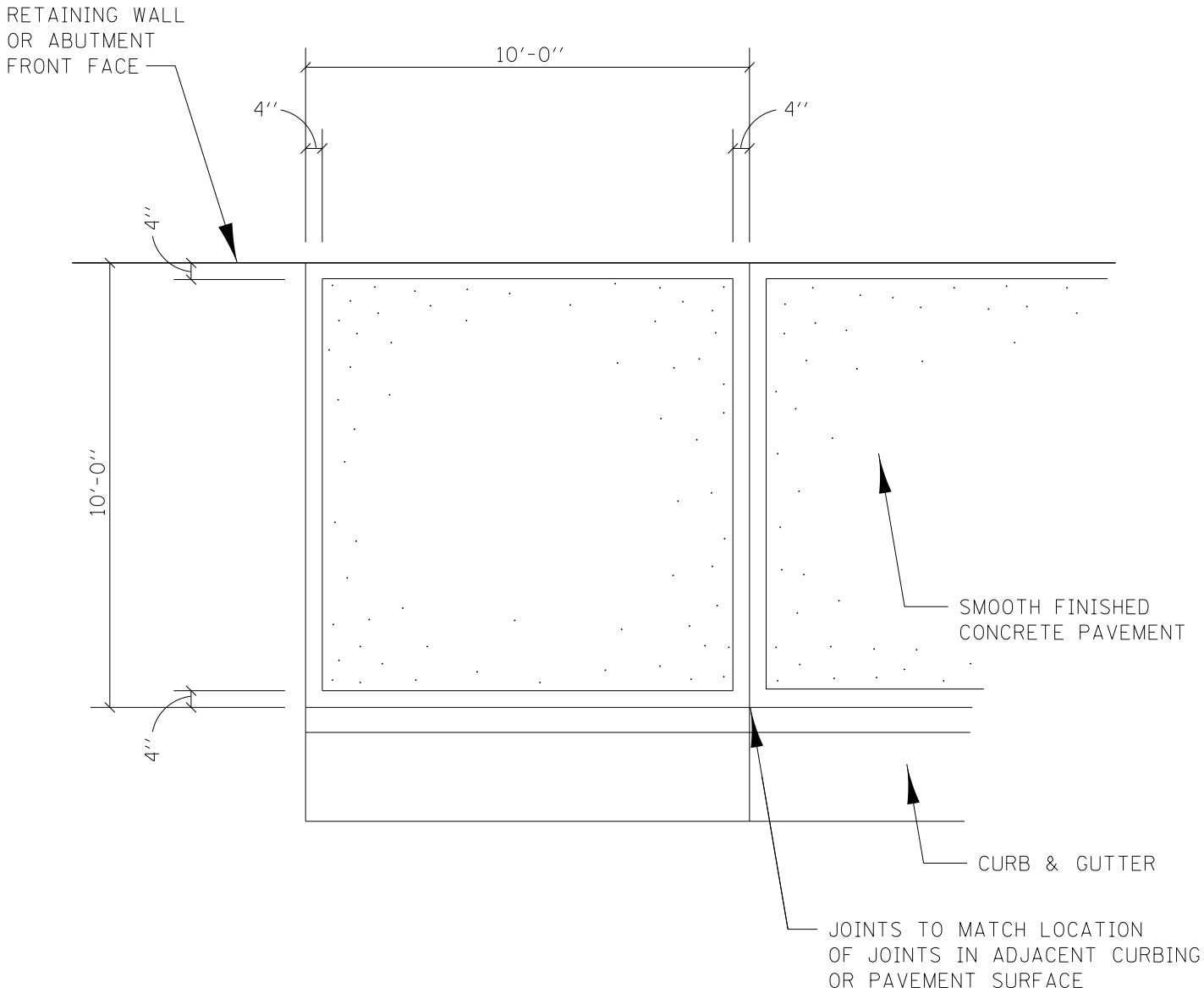
Figure 2-26: Existing Pedestrian Bridge: The existing pedestrian walkway at 16th Street NW lacks alluring appeal that encourages use.

Existing pedestrian walkway at 16th Street NW



This photograph demonstrates the possibility of a more creative solution. Shown is the Irene Hixon Whitney Pedestrian Bridge over I-94 in Minneapolis, Designed by sculptor Siah Armajani.

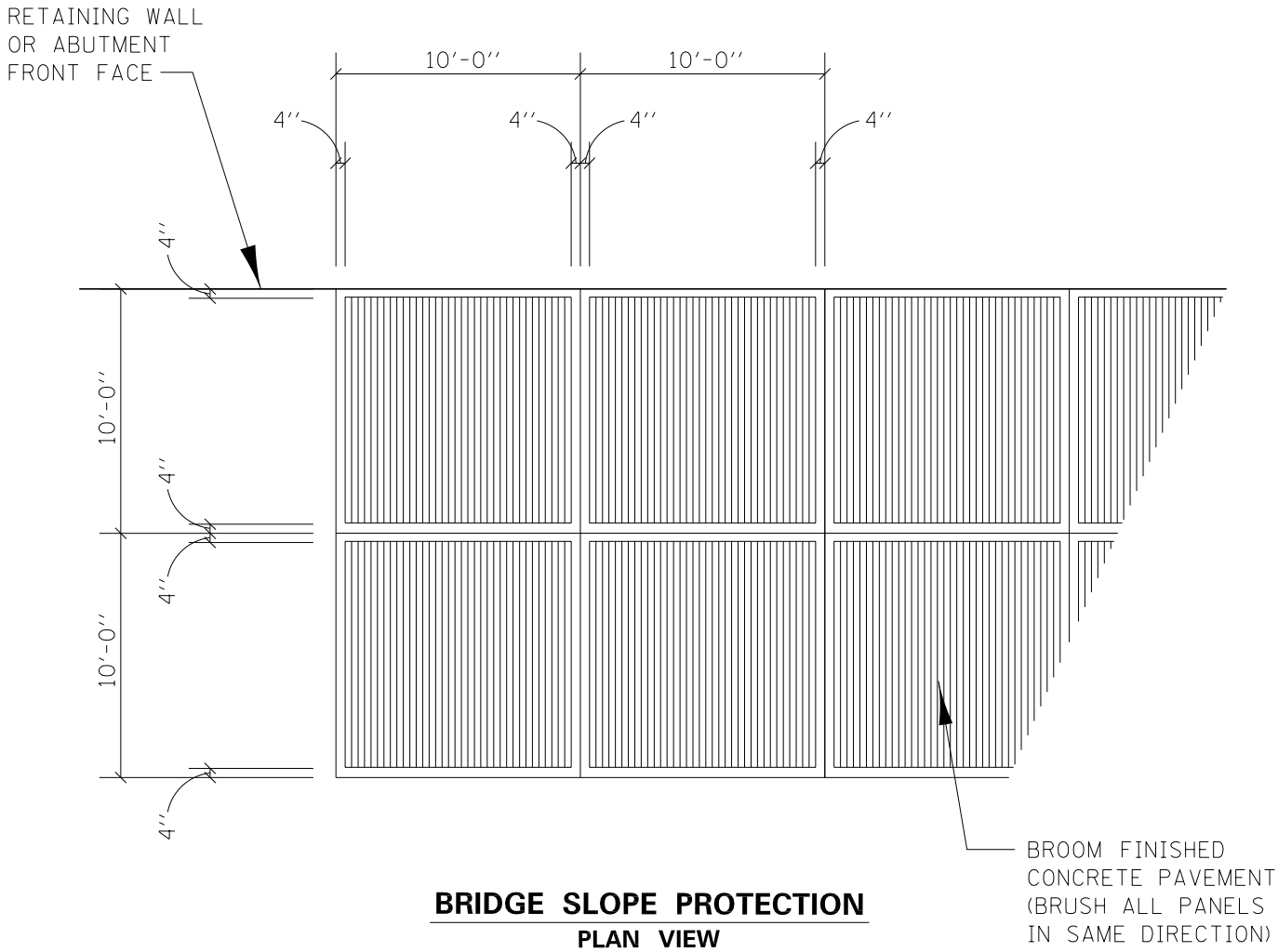
Figure 2-26a: Pedestrian Bridge A public competition may be held to design the railing system of this bridge as a work of art for the community.



SNOW BERM PAVING

PLAN VIEW

Figure 2–27: CONCRETE SURFACE TREATMENT



BRIDGE SLOPE PROTECTION
PLAN VIEW

Figure 2–28: CONCRETE SURFACE TREATMENT

APPLIES TO:		
STRUCTURE NUMBER	LOCATION	EXISTING/NEW
BRIDGE NO. 55059	TH52 SB RAMP OVER CASCADE CREEK	NEW
BRIDGE NO. 55060	TH14 EB LOOP OVER CASCADE CREEK	NEW
BRIDGE NO. 55061	TH52 SB OVER CASCADE CREEK	NEW
BRIDGE NO. 55062	TH52 NB OVER CASCADE CREEK	NEW
BRIDGE NO. 55063	TH14 EB LOOP OVER CASCADE CREEK	NEW
BRIDGE NO. 55064	TH14 EB RAMP OVER CASCADE CREEK	NEW
BRIDGE NO. 55057	TH52 SB OVER ZUMBRO RIVER	NEW
BRIDGE NO. 55058	TH52 NB OVER ZUMBRO RIVER	NEW

(PHOTO BY LSA DESIGN, INC.)

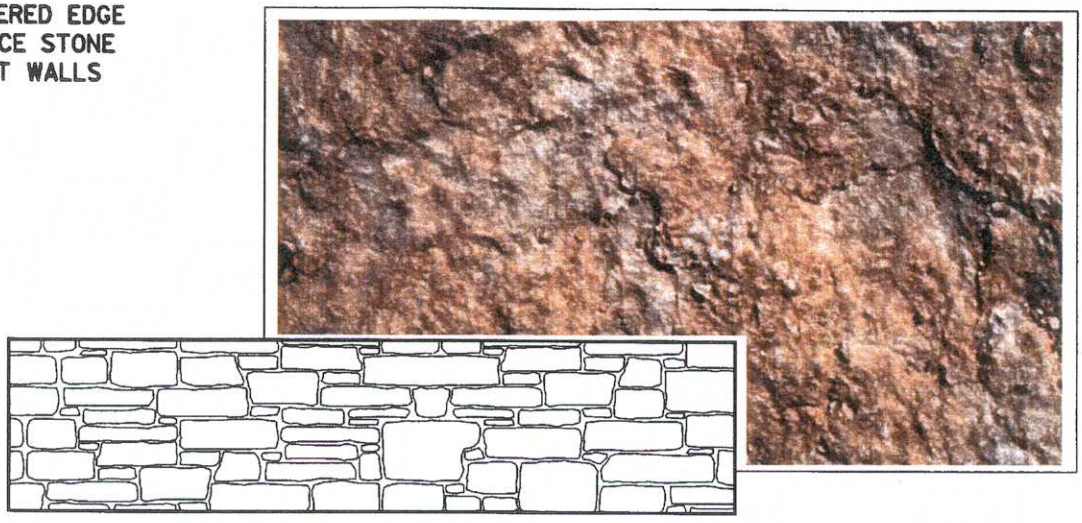
Figure 2-29: SLOPE PAVING

Shamrock Enterprises
Doty Quarry

Paulson's Quarry
(Photos by City of Rochester)

Figure 2-30: Design Inspiration Natural geologic formations of limestone and sandstone found in the Rochester area served as the design inspiration for the wall patterns on the project.

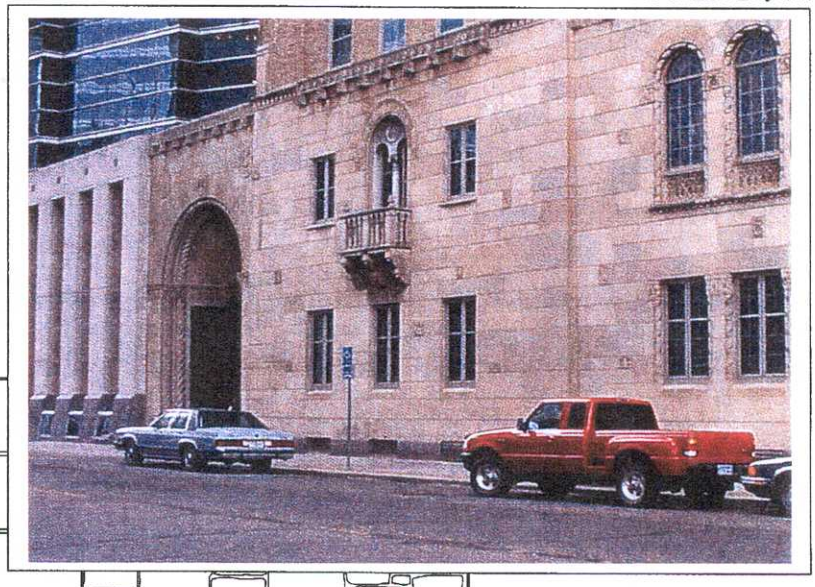
ROUGH WEATHERED EDGE
AND SEAM FACE STONE
FOR ABUTMENT WALLS



CUSTOM PATTERN REQUIRED TO CREATE THE TEXTURED
EFFECT OF A WEATHERED LIMESTONE OUTCROPPING.
(ACTUAL PATTERN REQUIRED IS NOT SHOWN)

PLUMMER BUILDING
ROCHESTER, MN

SMOOTH CUT SANDSTONE
BLOCK WITH FLAT PLANE
FINISH FOR PILASTERS



SANDBLAST PILASTER FOLLOWING FORM RELEASE
TO CREATE THE TEXTURED EFFECT OF
A CARBORUNDUM MACHINE SMOOTH FINISH

Figure 2-31: ARCHITECTURAL FINISHING TREATMENT

COLOR SAMPLE
AVAILABLE UPON
REQUEST.
(651) 296–2303

FEDERAL STANDARD 595B
COLOR NO. 14066 (FOREST GREEN)

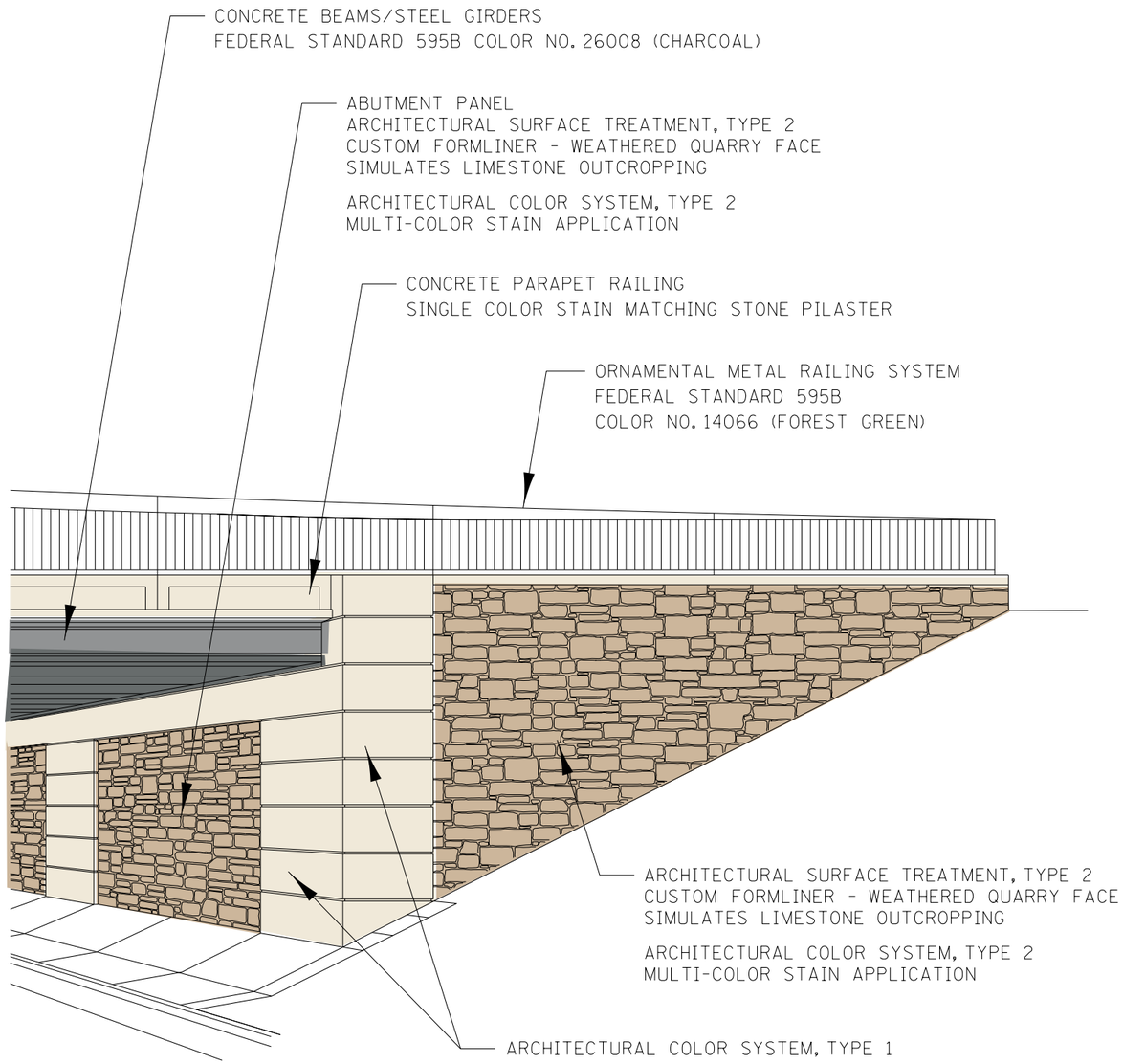
COLOR SAMPLE
AVAILABLE UPON
REQUEST.
(651) 296–2303

Mn/DOT GRAY MODIFIED

COLOR SAMPLE
AVAILABLE UPON
REQUEST.
(651) 296–2303

FEDERAL STANDARD 595B
COLOR NO. 26008 (CHARCOAL)

- FINAL COLOR SELECTIONS ALSO SHOULD CONSIDER SHADES IN THE DARK BLUE-BLACK RANGE.



PRELIMINARY CONCEPT

FINAL COLOR SELECTIONS TO BE MADE IN COOPERATION WITH THE CITY OF ROCHESTER BASED UPON FIELD TESTING AND SAMPLE PANEL CONSTRUCTION.

COLOR SAMPLE
AVAILABLE UPON
REQUEST.
(651) 296–2303

FEDERAL STANDARD 595B
COLOR NO. 33617 MOD (LIGHT TAN)

COLOR SAMPLE
AVAILABLE UPON
REQUEST.
(651) 296–2303

FEDERAL STANDARD 595B
COLOR NO. 33522 MOD (DARK TAN)

- COST PERMITTING, SUBSTITUTE MULTI-COLOR STAIN APPLICATION FOR DARK TAN COLOR SHOWN.

Figure 2–32: DESIGN THEME COLORS